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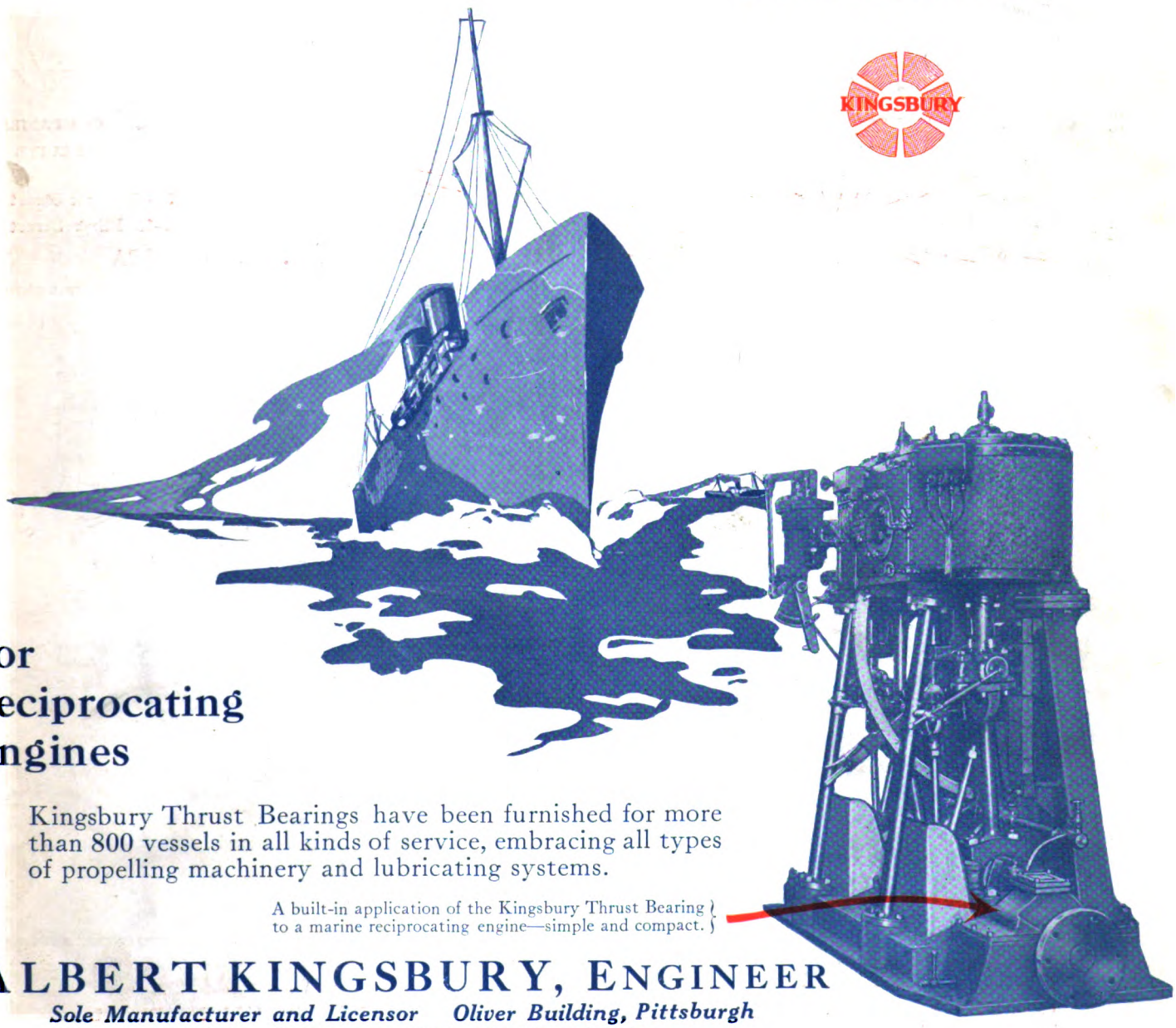

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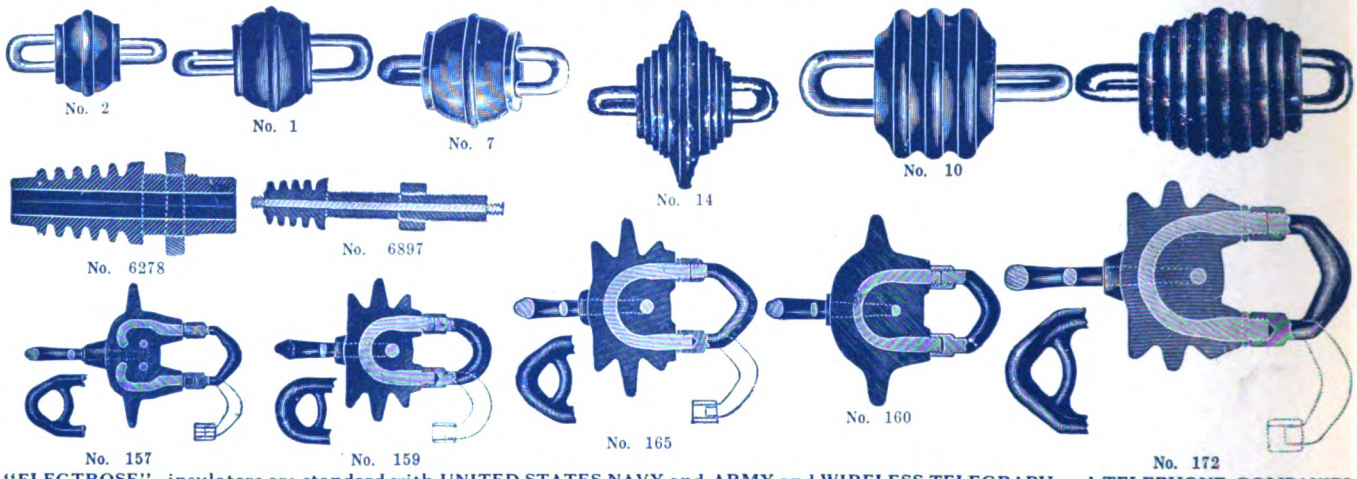

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THE MARINE REVIEW

VOL. 50 NEW YORK NOVEMBER, 1920 CLEVELAND No. 11

President Refuses to Obey Law

Executive Will Ignore Part of Jones Act Despite Supreme Court Decisions—Hurts American Shipping

SHIP operating and shipbuilding occupy a peculiar position among American industries. Originally ranking as the prime factors in building up a country from among the loosely united colonies, these industries suffered the penalty of their own success. In other words, after they had aided in making a country, the momentum they had imparted carried the country itself away from the sea and left the maritime industry to fight a long battle for existence. The result of the country's neglect was clearly shown when the declaration of war against Germany found the United States unable to exert its full strength until the shipyards were restored and were able to supply the carriers for placing troops and supplies in Europe.

Now the President of the United States has signaled out the marine field for another rare distinction. He has publicly refused to carry out the provisions of a law purposely drawn to transfer the war-given marine strength to a peaceful commercial fleet.

No other law passed by congress within the memory of the present generation of shipping men has aroused hopes like the Jones act. It offered a bulwark against the return of the anemic days between 1860 and 1917. Congress has always been regarded as the stumbling block in securing proper marine legislation but the past few weeks have shown that even favorable law-making by congress is not sufficient as the President may still arrogate the power to decide whether or not he will obey a law he himself has signed.

Works Injury to American Ships

The weakness of the defense for the President's refusal to notify foreign nations of the intention of the United States to regain its freedom of action on the question of imposing discriminating customs duties on imports in foreign vessels, is beyond dispute. The injurious effects of his refusal to obey the Jones law are for future determination but are certain to do incalculable harm to America's sea opportunities.

The action of the Executive is based on his announced belief that the constitution gives the President not only the right to draw up new treaties, but to initiate any modification of existing treaties, always, of course, with the advice and consent of the senate. The Supreme Court has clearly stated an exactly opposite construction of the constitution. In effect, the President in this case has placed the executive department in the position of refusing to carry out a law passed by the legislative branch well within the rights given it by the judicial branch. The equality of power between the three government departments is made a mockery.

Under the constitution, a treaty ranks as the supreme law of the land. Its status is that of a congressional act and it is similarly subject to abrogation or modification. The Supreme Court has rendered decisions stating that "A treaty may supersede a prior act of congress and an act of congress may supersede a prior treaty"—"A treaty * * * is subject to such acts as congress may pass for its enforcement, modification or repeal"—"A treaty can be deemed only the equivadent of a legislative act to be repealed or modified at the pleasure of congress."

Obey in 1915 But Not in 1920

Against these decisions of the Supreme Court, the secretary of state sets up only a veto message by President Hayes written in 1879. Secretary Colby chose from that message the clause questioning the right of congress to modify treaties but failed to call attention to the first half of the same sentence where congressional authority to terminate a treaty is acknowledged as "free from controversy."

In 1915, congress in a section of the seamen's law phrased in the same words as the disputed section of the Jones law, called for the abrogation of clauses of treaties conflicting with the LaFollette act. The President at that time notified 21 nations of the country's intention to abrogate such clauses. Some protests were filed but withdrawn. The only change between 1915 and 1920 is evidently in the President's decision to obey or disobey a law as he sees fit.

The American merchant marine now has a new struggle for existence just at a time when many of its problems had apparently been solved. The experience in such a battle gained during years of discouragement will prove an asset now.

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World Charter Market Reviewed by

RATES ARE FIRM

Quotations Show Tendency to Hold Levels of Recent Months — Passenger Trade Is Active

CONTRADICTORY statements have been made regarding the situation in shipping, the natural inference being this is a period of readjustment and uncertainty. One report from abroad stated more than 750 merchant ships are tied up in British ports. On the other hand it is said that the English are inviting American ships to engage in the trade between England and the continent of Europe. The shipping board has already tied up about 30 more government vessels. These are not exclusively the wooden ships and the smaller steel vessels. It is said that the shipping board is taking advantage of the slump in the freight market to make necessary repairs upon some of its vessels.

Operators of government tonnage on the other hand are no longer advocating a reduction in rates in order to keep the ships busy. They are inclined to the opinion freights are to be much more active. Already a tendency toward the better has been recognized. The shipping board, however, is considering a revision of the operators' agreement whereby the operators of government tonnage can be assured a better return on their efforts. The withdrawal of the inefficient ships in the government's merchant fleet is undoubtedly showing a good effect so far as steamship owners and operators are concerned. That was displayed conclusively in the coal trades, from which government tonnage has been withdrawn for some time past. Coal rates have materially strengthened.

Congestion in Ports Serious

There has been an active trade in the Cuba berth and demands of shippers are still insistent. But there is a serious congestion at the Cuban ports, some vessels having been delayed there for several months. Some shipping people believe it will take at least three months to relieve this congestion. The Congress line has arranged with the Cuban government to expedite the discharging of its vessels. The Dollar line has diverted one of its steamers to the Antwerp service because of the difficulties of making a stop at Havana on its regular coastal run. A threatened coal shortage at Havana is adding to the difficulties.

One of the later reports is to the effect that many Spanish lines are considering laying up their ships because of the extreme high cost of operating. Coil and oil costs are the most serious, although seamen's wages are said to be too high. In the matter of bunkering America, of course, is better situated.

In the face of a growing amount of tonnage shipping men have expressed some apprehension lest rates would begin to show another weakness. That this has not taken place, they say, is attributable to the fact that any such reduction due to this cause would be short lived, because the present dearth of oversea merchandise is nearing its end, and demands for American commodities abroad is going to show itself soon again. Foreign exchange slumps, due to Europe's heavy purchases in the past, the inability of South America to market her produce and the industrial slump in the Orient, have been seriously checking exports during the summer. A change in that regard, however, is expected before many months pass. Moreover, the request for coal carriers is absorbing a large amount of tonnage under practically every flag. This is true particularly of freighters operating under foreign register and carrying American coal.

With New England ports holding about 75 per cent of their winter supply of coal, and a good prospect of getting the other 25 per cent in due time, the embargo on export coal has been partially lifted and great quantities have been leaving daily the south Atlantic ports for all parts of the world. This trade has been supplying employment to hundreds of vessels, principally foreign, which would otherwise now be idle were it not for foreign market demand for American coal. Comparatively few American bottoms have been engaged in this trade.

Object to Excessive Demurrage

Grain shipments have been confined to gulf and certain Pacific coast ports. Considerable quantities of grain have been shipped from the Columbia river. Formidable fleets of British vessels have been sailing to Portland, Oreg., and other grain shipping points to load grain for Great Britain and the continent. In this connection, it was announced that the shipping board has advanced its rates from $20 to $23 per ton, at the same time offering concessions on "lay days." Time saved in receiving cargo at one port will be taken into consideration in unloading at another before demurrage charges take effect. Grain shippers have shown a preference for foreign flag ships because they object to the demurrage charges exacted by the shipping board vessels. Grain shipments from the Atlantic ports are expected to improve. Some made its appearance at the eastern terminals last month, which gave a measure of en-

Controls Norse Ships

THE community of interest under which Norwegian shipowners act is evidenced in the fact that about 90 per cent of the merchant fleet of Norway is represented in the membership of the Norwegian Shipowners' association. A report read at its annual meeting brought out that 1205 ships, with an aggregate tonnage of 1,939,459 gross tons, are controlled by the body, of which 1,692,123 tons is steam and 247,336 tons sailing craft. Since the ministry of shipping ceased its activities, early in 1920, the association has assumed the task of supplying tonnage at the government rates. The association plans to increase its scope.

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Experts in This Country and Abroad

couragement, but it is felt the bulk of the movement has not yet started. There have been some orders for sulphur from Sabine Pass to Gothenburg, and phosphates from Savannah to Denmark, while cotton tonnage has been required to Germany and Italy at recent steady rates. Canadian deals have been quiet at 170 shillings, but pitch pine has been open to Holland at 340 shillings per standard.

Steamship companies doing business between the Atlantic and Pacific coasts have reported business fairly satisfactory and little difficulty in securing cargoes for San Francisco, Seattle and Vancouver. Most of these lines proceed to the Orient from Vancouver. Tramp steamers have been slow in filling their holds, and few have waited for full cargoes before asking for clearance papers. The speedier liners in established routes have the advantage.

Passenger accommodations on the east bound transatlantic movement have been offering freely. The liners have been leaving with but a percentage of their cabins filled. The westbound movement, however, has been growing. There has also been a heavy drain upon the third-class accommodations westbound. The immigrant movement to the United States is now so large that it requires an extra staff at the government station to examine them. Steamship people anticipate that the immigrant traffic from Germany will be extra heavy next year.

Plan to Extend Services

The International Freighting Corp. has started a feeder service from Marseilles to Piraeus, Salonica and Constantinople, employing two Lake-type vessels. This initiates the feeder-service principle for the American merchant marine on the Mediterranean. The same thing was inaugurated in the Orient some time back.

The shipping board has inaugurated a service between New York and London by allocating three of the new 535-foot passenger steamers. The PANHANDLE STATE, the first ship to sail, carried but 15 passengers. The U. S. Mail will manage the line for the shipping board. The Luckenbach line proposes to establish a freight line from New York to Hamburg, starting this month. The International Mercantile Marine Co. has scheduled eight cruises for this winter and spring. The United Fruit Co., also, intends to have some special cruises. The Barber line has berthed its first steamer for its services from New York to Hamburg. The North Atlantic & Western Steamship Co. has established a service between Boston and Liverpool and Glasgow. This line will have also a regular three-week steamship service between Portland, Oreg., and the ports of Philadelphia and Boston. The Panama Steamship line is now running a direct service from New York to ports on the west coast of South America.

The United American Lines are resuming the American-Hawaiian line's Atlantic and Pacific services via the Panama canal. The Isthmian line's coast to coast service via the canal is to be increased to 20 ships. The Southern Pacific Co. has re-established its Sunset gulf route via the steamers of the Morgan line. It is said that the Baltimore Dry Docks & Shipbuilding Co. has formed a $2,000,000 corporation for the purpose of operating a fleet of four tankers, under the name of the Calvert Navigation Corp.

The Julius Kessler Steamship Co. has been incorporated for the purpose of promoting trade between Canada, the United States and the West Indies. William Saenger, Beaumont, Tex., announces citizens of that city are subscribing the capital for a steamship company to connect that port with Porto Rico, Vera Cruz and Tampico. The Marine Operating Co., Inc., New York, has filed a petition in bankruptcy.

Business Changes Are Few

Company changes under foreign flags show no more activity than among American companies. The French line has established a new freight service between Philadelphia and French Atlantic ports. Furness, Withy & Co. have purchased all of the property and good will of the Trinidad Shipping & Trading Co. and the vessels of the Quebec Steamship Co. This intrenches Furness, Withy & Co. in the trade with the Atlantic islands. The Italian-American line has resumed its services between Philadelphia and the Mediterranean. The Canadian Government Merchant Marine, Ltd., and the British India Steam Navigation Co. jointly have established a route from Canadian ports to India. The Canadian line also has established a service between Montreal and Trinidad. A new Ellerman & Bucknall service has been inaugurated from Montreal to Levant and Black sea ports.

The Royal Holland Lloyd has inaugurated a service between Amsterdam and New York with bimonthly sailings. This line will have also a sailing from Amsterdam every three weeks to Havana, Vera Cruz and New Orleans. The United Netherlands Shipping Co. has started a cargo service from Rotterdam to South America. The Lloyd Royal

DULL ON PACIFIC

Scarcity of Cargo in Oriental Routes More Pronounced — Lumber Carrier Demand Is Greater

Fights Board's Policy

WITHDRAWAL of 1,200,000 tons of ships from the transatlantic coal carrying trade by the shipping board, is strongly condemned by a committee of the New York chamber of commerce and unofficially concurred in by shipping interests generally, many of them operators of government-owned tonnage. Withdrawal of this tonnage by the government caused a jump of from $2 to $3 in the carrying rate. An influx of foreign ships followed, the report declares, with the result they obtained millions in freight which would have gone to American tonnage, but for the board's action. Immediate action in appointing new board members is urged.

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Belge will place four passenger vessels in the Brazil and River Plate trade. Lampolt & Holt have started a new monthly freight service from New York to Bahia and return, the ships calling at Para and Pernambuco. This line will in the future include Trinidad in its itinerary. The Koninklijke Hollandsche Lloyd will discontinue its passenger service to Bahia and Pernambuco, but will continue its freight services.

Pacific Freights Decline

Declining freights still feature the charter situation on the Pacific. The market is weak, particularly with reference to steamers. Sailing vessels continue in better demand but the general tendency is toward a lower level. On the Oriental route, business is slow and the movement of cargo lighter than in months. Operators to the Far East do not anticipate any improvement for several months. Vessels are arriving from China and Japan in ballast or with light cargoes. The movement to the Orient is heavier, but space in that direction is still a drug on the market.

In retaliation on Japanese tramps, which are alleged to have cut the rate on lumber to Japan and China, the shipping board recently reduced this tariff from $25 to $17.50 per thousand feet. This action since has been duplicated by the conference lines. It is likely the rate shortly will be $15, as there is a disposition on the part of some transient lines to cut further. However, the reduction has not stimulated the movement of lumber, as the Orient is not buying. Other commodities are being carried to the Orient on conference rates, the basis for steel remaining at $11.

See End Of Trade in Cotton

Pacific operators are alarmed at the reduction in the cotton rate from gulf ports to the Orient. This and the increased rail charges have practically eliminated the transpacific lines from the cotton business, which previously has always provided a heavy movement through Pacific terminals during the winter.

The shipping board, after a brief experiment with a $20 rate on flour and wheat to United Kingdom, has raised to a $23 level which now is in effect. It is understood, however, that some foreign vessels still are booking this cargo at $20. The shipping board also has increased the tariff on railroad ties from north Pacific to United Kingdom from $45 to $55, effective in December. The former rate has been in effect for about a year and vessels are still being chartered on that basis. There is a considerable movement of ties to Great Britain. Lumber is moving in that direction only in parcel lots on which the conference rate is $60.

Railroad Rates A Barrier

Under the new railroad rates, North Coast lumbermen have been practically eliminated from markets east of the Mississippi and naturally are turning to the water route. Several lines are now operating regularly from coast-to-coast and are getting offerings of cargoes in excess of the space available. The rate on wood ties is $22.50 and on lumber $24 to New York and other adjacent ports. It is significant that, upon the advent of the higher rail rates, the railroads which had contracts for ties on the west coast immediately ordered them moved by water. Although the shipping board has increased its water rates from coast to coast, traffic is increasing on this route. Operators are giving preference to other cargo than lumber, but the latter is offering in the largest quantities.

There is a demand for vessels to carry lumber to Cuba at from $22 to $23 and a call for steamers to load railroad ties for India at $50. Lumber charters to Peru and Chile and to Sydney, Australia, are being done on a basis of $30. A large Swedish motorship recently left with about 4000 tons of British Columbia coal for Scandinavian ports, a movement heretofore unprecedented.

Japanese owners are greatly concerned about the decline in freights and many large carriers are idle in home waters. The refusal of President Wilson to abrogate foreign treaties in conflict with the new merchant marine bill has reassured foreign operators but it has complicated the issue as far as American operators are concerned.

Although two new services were put in operation during the past month out of the port of Boston, shipping generally has been quiet. Trade with Mediterranean ports from Boston seems to have suffered more severely than that of other routes and vessels on recent sailings for this market have had to put in at Canadian ports in order to complete cargoes. The Scandinavian trade has been sufficient to fill the regular vessels loading at Boston, and return cargoes, while not as heavy as outgoing have held up to the level established earlier in the year.

Invades English Territory

The North-Atlantic & Western Steamship Co. has inaugurated a service from Boston to Liverpool and Glasgow, and Gilmontin & Co. have established another direct service to Glasgow. The ISLETA which sailed recently in the former service carried a cargo of 7000 tons of iron and steel scrap for Scottish shipbuilding firms. The coal trade which caused the coastwise traffic out of Boston to jump into activity earlier in the season when the priority ruling went into effect has now slowed down considerably through reluctance of consumers to purchase at present prices. This has had the effect of switching some of the bottoms from Boston to the export trade out of southern ports. The service established some months ago from Boston to Pacific coast ports has proved decidedly successful and another vessel, the 8000-ton M. C. BRUSH, has just been purchased from the United States shipping board by the North-Atlantic & Western Steamship Co. to add to the fleet engaged in this trade. This will make nine vessels operating between Boston and San Francisco with regular sailings every two weeks.

Western grain is commencing to appear at Boston for export and unusually large tonnages of this commodity are looked for later in the season. Portland, Me., is commencing to feel its usual fall impetus due to northwestern grain and also to the gradual transferring of business from Canadian ports. Iron and steel products in a semifinished state have figured largely in the exports to Scandinavia. Recent shipments of wire from Worcester, Mass., to a Denmark mill have been in the thousands of tons. Exports of automobiles and machine tools have fallen off as well as manufactured products such as shoes, boots, rubbers and many classes of machinery.

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Ocean Freight Rates

Per 100 Pounds Unless Otherwise Stated

New York to	Grain	Provisions	Cotton (H.D.)	Flour	General Cargo cu. ft.	General Cargo 100 lbs.	††Finished Steel	Coal from Virginia cities
Liverpool	$0.50	$1.00	$1.80	$0.65	$0.50	$1.00	$10.00 T	.....
London	0.50	1.00	1.80	0.65	0.50	1.00	10.00 T	.....
Christiania	0.80	1.10	2.00	1.00	0.70	1.50	12.00 T	$14.50 T
Copenhagen	0.80	1.10	2.00	1.00	0.70	1.50	12.00 T	14.50 T
Hamburg	0.55	0.85	1.25	0.65	0.60	1.20	10.00 T	13.00 T
Bremen	0.55	0.85	1.25	0.65	0.60	1.20	10.00 T	13.00 T
Rotterdam	0.55	0.85	1.25	0.65	0.50	1.00	12.00 T	11.50 T
Antwerp	0.50	0.85	1.25	0.65	0.50	1.00	8.00 T	11.50 T
Havre	0.50	0.65	1.07½	0.70	0.60	1.25	6.00 T	12.00 T
Bordeaux	0.50	0.65	1.07½	0.70	0.60	1.25	8.00 T	12.00 T
Barcelona	0.75	30.00 T	1.75	30.00 T	—30.00 T—		18.00 T	14.50 T
Lisbon	0.75	30.00 T	1.75	30.00 T	—30.00 T—		18.00 T	13.00 T
Marseilles	0.75	1.25	1.90	1.25	0.70	1.50	15.00 T	14.50 T
Genoa	0.65	1.10	1.00	1.00	0.65	1.20	14.00 T	14.50 T
Naples	0.65	1.10	1.00	1.00	0.65	1.20	14.00 T	14.50 T
Constantinople	18.00 T	28.00 T	....	18.00 T	—28.00 T—		18.00 T	17.00T
Alexandria	....	1.40	1.52½	18.00 T	0.62½	1.12	15.00 T	16.50 T
Algiers	0.65	1.75	....	20.00 T	0.87½	1.56¼	14.00 T	14.50 T
Dakar	23.00 T	23.00 T	....	23.00 T	—23.00 T—		20.00 T	.....
Capetown	30.00 T	27.00 T	....	30.00 T	—27.00 T—		20.00 T	.....
Buenos Aires	....	....	....	....	—20.00 T—†		12.00 T†	15.00 T
Rio de Janeiro	....	....	....	....	—22.50 T—†		16.50 T†	15.50 T
Pernambuco	....	....	....	....	—23.50 T—†		17.50 T†	16.00 T
Havana	0.55*	0.63*	....	0.55*	0.75*	0.94*	0.71*	6.50 T
Valparaiso	1.25	1.25	1.16	1.16	0.70	1.25	18.00 T	.....
San Francisco	....	2.25	....	1.10	....	....	1.00	.....
Sydney	....	....	....	....	25.00 to	30.00 T	15.00 T	.....

T—Ton. †Landed. ††Heavy products limited in length. *Extra charge for wharfage.

From North Pacific Ports to	Lumber Per M. ft.
San Francisco	$ 8.50
South California	9.50 to 10.00
Hawaiian Islands	16.00 to 18.00
New Zealand	30.00
Sydney	30.00
Melbourne-Adelaide	32.50
Oriental ports	17.50

From North Pacific Ports to	Flour and Wheat Per Ton
Oriental ports	$10.00
United Kingdom	23.00
Scandinavia	23.00

From North Pacific Ports to	Lumber Per M. ft.
Peru-Chile	$30.00
South Africa	50.00
Cuba	22.00 to 23.00
United Kingdom	60.00
United Kingdom (ties)	45.00
New York	24.00
New York (ties)	22.50

From North Pacific Ports to	Steel Per Ton
Oriental ports	$11.00

From North Pacific ports to	Cotton Per Ton
Oriental ports	$20.00 to 25.00

Principal Rates to and From United Kingdom

	s	d
Grain, River Plate to United Kingdom	80	0
Coal, South Wales to the Near East	45	0
Coal, Newcastle to France	25	0
Iron ore, Bilboa to Middlesborough	18	0
General British market, six months time charters, per ton per month	13	0

British Shipping Market Has Better Tone

(From Our European Manager)

London, Oct. 10.—(By cable)—Time charters show improvement. South Wales coal shipping more active on account of temporary strike relief. Australian grain shippers find difficulty in attracting sufficient vessels to Australia in ballast. Far Eastern inquiry better with outward cargoes scarce. Coal vessels to Italy are demanding minimum discharge of 1000 tons daily as demurrage protection against port delays. Scandinavians are cancelling some shipbuilding contracts. British seamen's union has rejected by a more than 3 to 1 vote motion for government ownership and operation.

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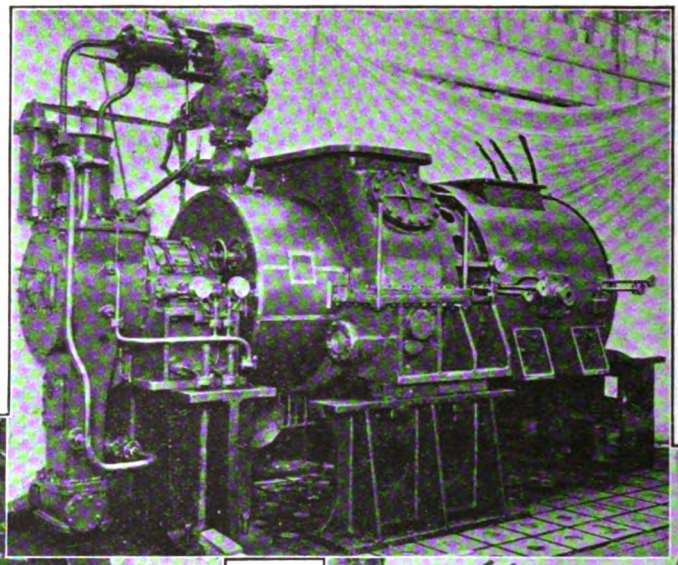
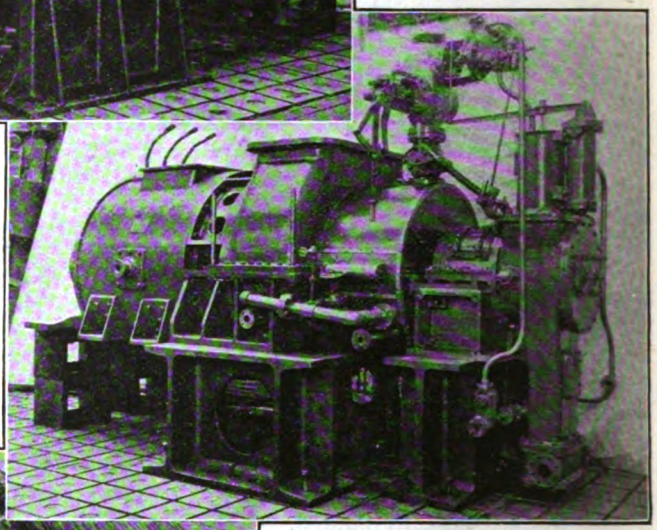
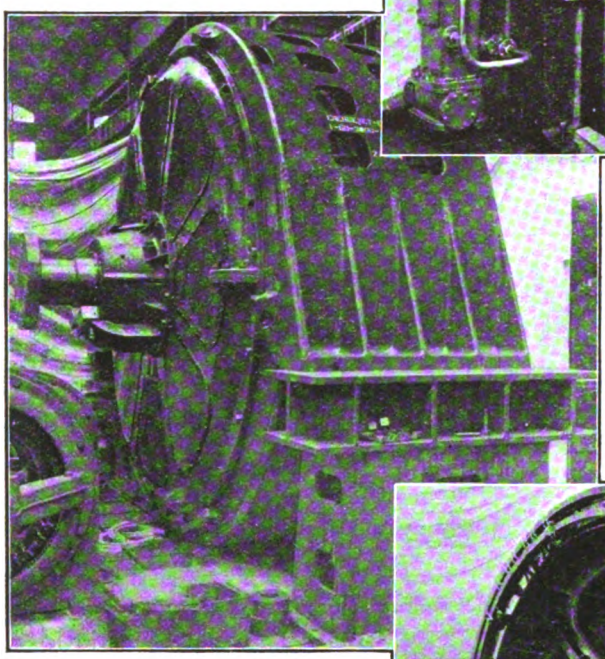
Port View of Turbine-Generator Set—Looking Aft

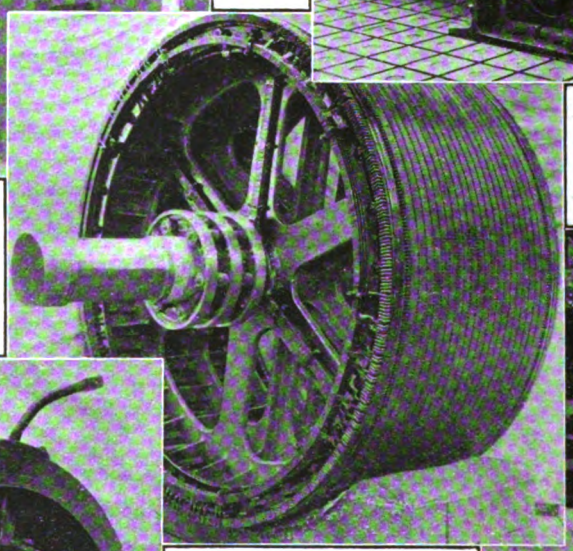


Starboard View of Turbine-Generator Set—Looking Aft

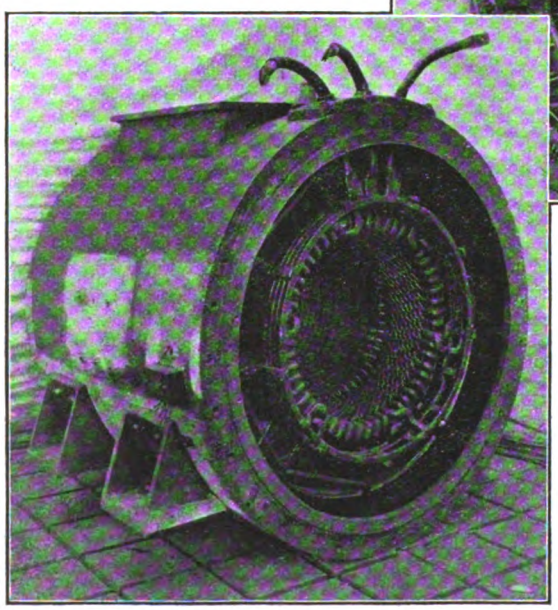


Coupling End of Motor for Propeller Drive

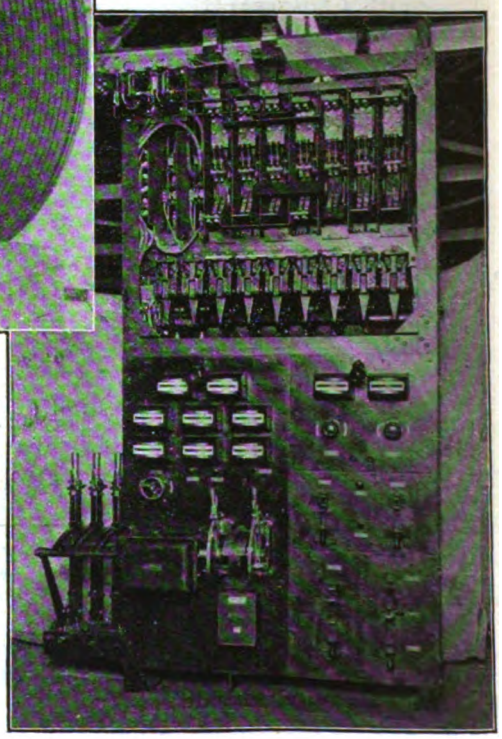




Rotor-Collector End of Induction Motor



Alternator Armature Showing Winding



General Control Switchboard

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First Electric-Driven Freighter

New Trail Is Blazed by Applying Magnetic Propulsion to Slow Speed Commerce Carrier

THE steamer ECLIPSE, first electrically driven general cargo merchant vessel in the United States, will be placed in service in Jersey City, N. J., in October. She also is the first electrically propelled vessel owned by the United States shipping board and is under charter to the American line of the International Mercantile Marine Co.

The ECLIPSE is of 11,868 tons deadweight, 440 feet length and 56 feet beam. The boat was built by the Union Iron Works, San Francisco. The electric propulsion machinery was manufactured by the General Electric Co., Schenectady, N. Y., and installed by the Vulcan Iron Works, Jersey City.

Propulsion machinery consists of a marine turbine generator set and a 3-phase induction motor, which drives the single propeller shaft at 100 revolutions per minute. There also are two steam-engine driven, 125-volt alternating current exciters and a control equipment for maneuvering the ship.

Turbine Automatically Governed

The turbine is of the horizontal Curtis type operating normally at 3000 revolutions per minute and was developed by the General Electric Co. for marine purposes. The governing system is so arranged that the turbine is controlled by a hydraulic variable speed governor at speeds from 20 to 110 per cent of normal. It is further provided with protective devices in the way of a centrifugal type pre-emergency governor controlling the speed up to 115 per cent of normal and a ring type emergency governor, which prevents the turbine from running at speeds exceeding 125 per cent of normal.

The 3-phase generator of 2300 volts is especially designed for marine service. It incorporates several features necessary to meet the particular requirements of the class of work it is called upon to do. The stator consists of a cast iron, 1-piece frame with openings in the top for ventilation. The core is built up of annealed segments of thin sheet iron of special material to insure low core loss and is held in place by heavy cast iron frame flanges at each end.

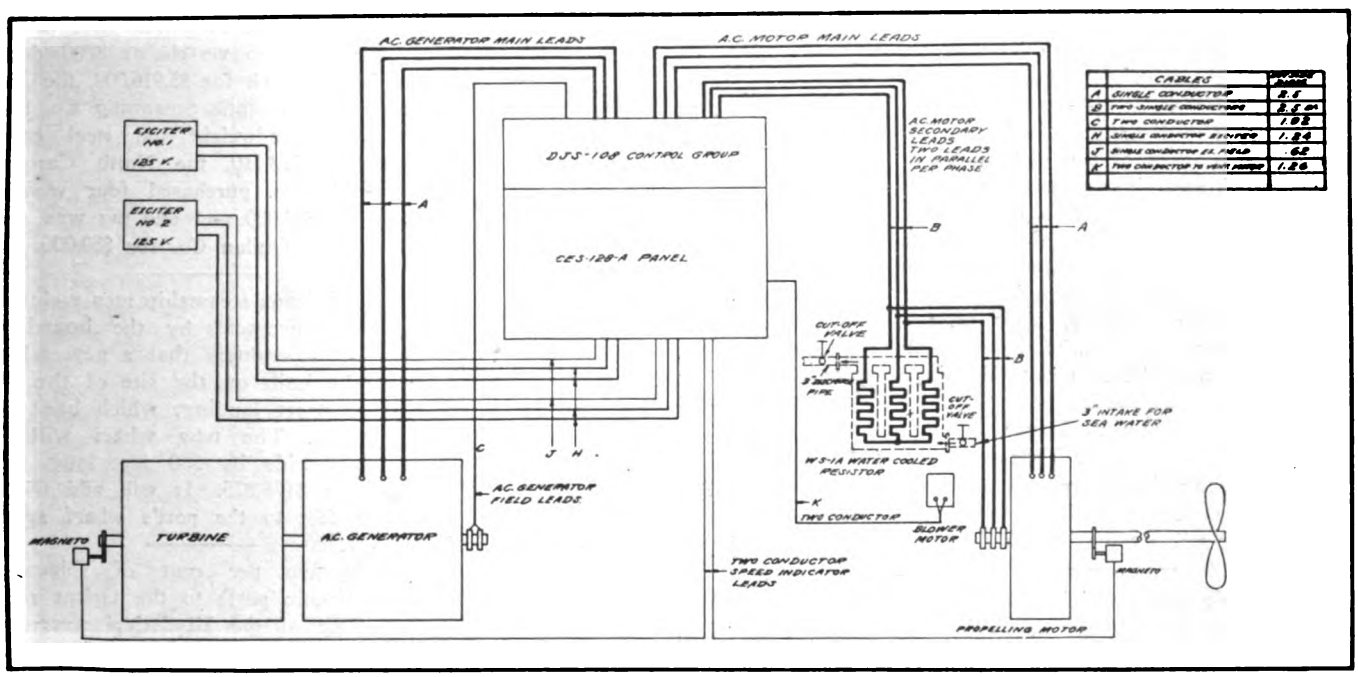
Windings are formed coils pressed from enameled cable, each turn consisting of rectangular copper strips in multiple. Eddy currents are eliminated by the strips being well insulated from each other. Ventilation is provided by a centrifugal fan mounted at each end of the rotor.

The propelling motor is an induction motor rated at 3000 horsepower and revolves at a normal speed of 100 revolutions per minute, which gives a total reduction from turbine speed to propellor speed of 30 to 1. The motor is ventilated by a motor driven blower. Construction of the motor stator is similar to the generator stator. The rotor consists of a cast iron spider keyed to the shaft on which the rotor core is assembled. The windings consist of insulated copper bars.

Control Equipment Centralized

Control equipment consists of a control group, a water-cooled resistor, and a control panel. The water-cooled resistor is inserted in the motor circuit, when operating the motor at low speeds, and is mounted on top of the control panel. The panel is a structural iron cell faced on one side by a sheet steel plate upon which are mounted all the electrical instruments and the electric and speed levers for normal operation of the machinery, the two levers being mechanically interlocked, to prevent improper starting and running conditions. The electric lever moves the master controller, which in turn energizes the contactors of the control group, normally operated by solenoids.

In addition to the speed and electric levers, there is a field resistor for regulating the generator field resistance and an auxiliary handle for



LAYOUT OF ELECTRIC PROPULSION SYSTEM ON FREIGHT STEAMER ECLIPSE

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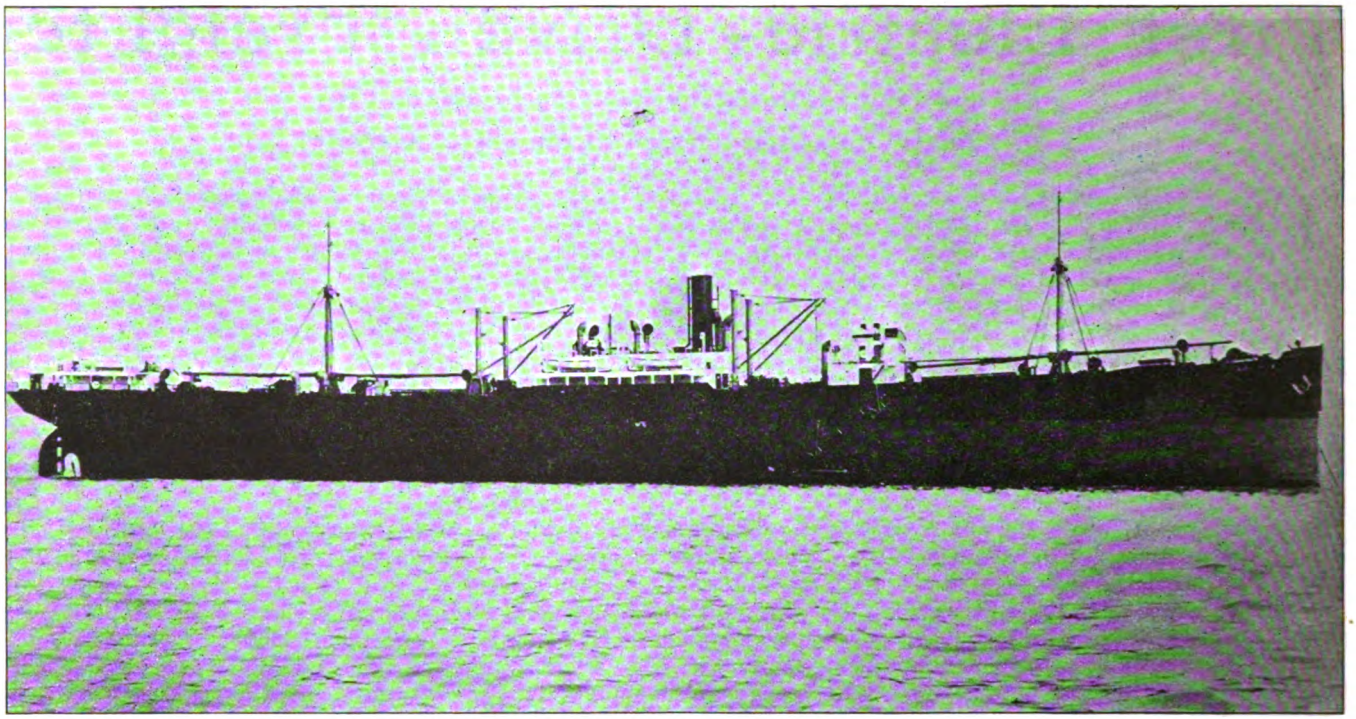

ECLIPSE, FIRST ELECTRICALLY PROPELLED FREIGHTER BUILT IN U. S.

operating a fused disconnecting switch in the control circuit leading from the 125 volt power supply to the master controller. There also are levers for connecting either exciter into circuits, two exciter resistors, one for each exciter, and levers for connecting the blower, and generator field to the exciter bus.

If for any reason it should become necessary or desirable to operate the control group manually, it could be accomplished by means of three levers mounted to the left side of the control panel. These levers are from left to right the resistor lever, the field lever, and the reverse lever. These levers actuate the contactors directly by means of cams.

The proposed action of the board of commissioners of the port of New Orleans in assessing 4 cents a gross ton on ships whose cargo lies in the wharves or in the wharf sheds beyond the time set by the operators of those ships has aroused a storm of protest from steamship owners, their agents and exporters as well, who declare that the order will drive away shipping.

Launched recently at Havre, France, the new turbine steamer VERSAILLES, to be used on the New Haven-Dieppe service, is expected to exceed a speed of 25 knots. She will fly the French flag.

A seagoing raft containing 500,000 feet of piling left the Columbia river recently in tow of a tug. The raft was built by the Hammond Lumber Co. and is 720 feet long.

Set Marine Show Date

Folders announcing the second New York marine show to be held in the Grand Central Palace, New York, the week of Jan. 24, 1921, have been issued. This exposition, like its predecessor early this year, will be held under the auspices of the National Marine League of the United States and under the direction of the General Expositions Co. It is stated that "this exposition will demonstrate in concrete form America's astonishing achievements in shipbuilding, ship operating, marine engineering, ship chandlery, inland waterway and port development, and training of officers and men to operate American ships."

The folder further states:

"The exposition consists of displays of specialties by progressive manufacturers. The product itself is set up and actually operated or displayed in a manner which emphasizes its selling qualities.

"The national marine exposition at New York will be the third show held. Their continued success is due to the personal contact obtained between an exhibitor and his customers. The buyers attend the show expecting to see the latest developments in marine engineering and ship construction and operation. The exhibitor meets them face to face, able to demonstrate his products before their eyes.

"Marine shows sell goods—and make friends.

"The object of this exposition will be twofold: *First*—To provide a market place where buyers and sellers of ships, service and marine equipment may conveniently meet and do business; *Second*—To impress the public of the entire country with the wealth and magnitude of our American merchant marine to the end that this part of the nation's transportation problem may receive the serious and intelligent attention of both national and state lawmakers"

Sells 10 Ships in Week

Ships sold by the government during the week ended Sept. 11 brought a total of $6,664,110, according to a report issued by the shipping board.

The Pensacola Steamboat Co. bought four steel cargo vessels of 8700 deadweight tons each for $5,916,000, the Baltimore Transatlantic Steamship Co. took one 3525 deadweight ton steel cargo ship for $523,110, the North Carolina Steamship Co. purchased four wooden hulls for $45,000 and one tug was sold the Warner-Quilan Co. for $80,000.

New Orleans steamship men welcome the announcement by the board of port commissioners that a new wharf is to be built on the site of the old Clouet street landing, which has rotted away. The new wharf will be 125 feet wide by 530 feet long, and will cost $178,875. It will add 66,250 square feet to the port's wharf space.

Eighty-five per cent of shipments from Pacific ports to the Orient originate east of the Mississippi river and a like volume of imports which pass through Pacific ports are sent east of the Mississippi.

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Opens New Service to Germany

American Line Carries Through Successfully Its Plans for Passenger and Freight Connection with Hamburg

BY WINFIELD M. THOMPSON

INAUGURATION of the American line's passenger and freight service between the United States and Germany, the first of its kind established between the two countries following the cessation of hostilities in the world war, took place in December, 1919. Beyond knowing that this service is under the American flag, the public has had little information concerning it. An official survey of the facts connected with this most interesting development in international shipping has just been made for THE MARINE REVIEW.

In the 10 months that have passed since this service was established, much has been accomplished toward giving American shipping interests a strong and probably unshakable footing in the development of Germany's post-war commerce with this country. The new service stands by itself, on the basis of its own nationality. Its staff and agents are Americans. It has planted the American flag on the quays of Hamburg regardless of whether the German shipping companies return in any degree to their prewar greatness or not. It is not necessarily interested in their problems of reconstruction, but is going ahead with its own development of port facilities as if the shipless Germans had none to offer by way of barter in exchange for a new foothold in the seaborne trade of the world. The story of the development already made by this significant service is one of the most striking that has been unrolled on the screen of historical shipping events following the world war. The shipping world knew that Germany, shorn for her crimes of her seagoing tonnage, could not unaided come back into the shipping field, and that a rich prize awaited the first company that could place an adequate passenger and freight service in operation between any one of the major German ports and New York. America was the storehouse of food and clothing, farm implements and machinery, manufactured goods and raw materials, on which Germany could most readily draw to replenish her stores of necessaries, depleted by six years of war. The supplying of her needs would form the first step in trade that would develop normally to great proportions.

With their eyes on the inviting opening presented to them by the elimination of German shipping from the sea, American ship operators were aware, from the moment the German western front began to crumble in the autumn of 1918, that the prize of first place in sea trade with Germany probably would fall to the shipping concern with the best equipped organization for taking it up promptly. There was no lack of shipping companies in the United States that aspired to seize the prize, but a majority of them had sprung up during the war, and lacked the proper kind of ships and organization with which to establish a passenger and freight business to German ports. Among the few American companies possessed of such ships, and of facilities for operating them in a trade that inevitably would encounter many difficulties not ordinarily met in the normal course of the steamship business, was the largest of them all, the International Mercantile Marine Co. This great shipping combination, owning more than 100 fine seagoing ships, and operating at that time about 50 more, as agent of the United States shipping board, had ample tonnage with which to start an all-American line to Germany. Furthermore it had abundant capital and surplus — its securities at present market values aggregate $139,000,000 — and an

NEW HOME OF THE INTERNATIONAL MERCANTILE MARINE CO. AT NO. 1 BROADWAY, NEW YORK

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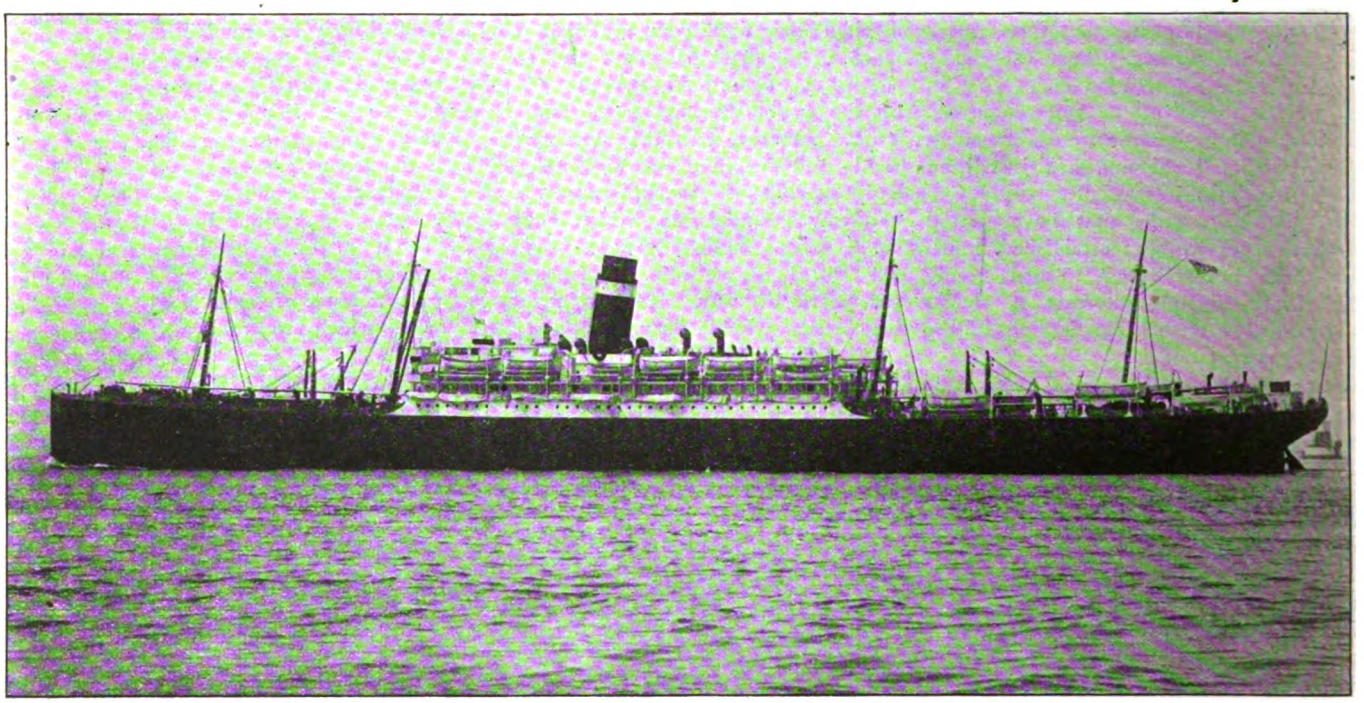
American operating organization dating back 50 years, or since the inception of the original American line.

With a company thus equipped, the will to enter the German field was quickly translated into action. Plans for a New York-German service was laid as soon as fighting ceased in France and Flanders, and their execution waited only on the release from transport service of four vessels first selected to operate on the new run. First among these were two large combination passenger and cargo carriers, the MANCHURIA and MONGOLIA, 13,639 gross tons each. The



S. S. MONGOLIA, FORMER PACIFIC LINER, NOW IN THE PASSENGER RUN BETWEEN NEW YORK AND HAMBURG

others were the CHAMPION and the DEFENDER, new 12,000-ton deadweight freighters, built in 1918 for the shipping board by the New York Shipbuilding Corp., Camden, N. J. Bought from the board for the American line, these vessels were renamed the MONTAUK and MONTANA, respectively. They are among the largest freighters produced in American yards as a result of the world war. To these four ships were added a number of standard steel freighters of the shipping board fleet, operated on a managing agency basis.

The MANCHURIA and MONGOLIA, like the big freighters, also are the product of American yards. They are sister ships, 600 feet long by 65 feet wide, built at the New York Shipbuilding Corp.'s yards. Originally designed for the International Mercantile Marine, these vessels were sold to the Pacific Mail Steamship Co., which operated them for a number of years between Pacific coast ports and the Orient. The low level to which American shipping had declined in the period directly preceding the world war had led the owners of these ships to dispose of them. The ships had but newly come back to the Atlantic when the war began, having been purchased by the International Mercantile Marine for service between New York and London.

The exigencies of the war changed the company's original plans for the use of the ships and with the entry of the United States into the great struggle, these ships, title to which had been transferred to the Atlantic Transport Co., a subsidiary, automatically became units in the military equipment of the United States for transferring its fighting strength to the scene of battle overseas. The MONGOLIA sprang into public notice at the outset of this phase of the contest, by firing the first American shot at Germany on land or sea, when attacked by a German submarine, which she drove under the surface with her guns. Throughout the war, the two big former Pacific liners were steadily at work. When the armistice was declared, they were still so busily employed that it was not until midsummer of 1919 that they were released from requisition by the government, and turned back to their owners.

Heavily Laden on First Trip

Reconditioned without loss of time, the big ships were ready by December to establish the American line's German service. Their passenger quarters were handsomely refitted, with capacity for 265 in the first cabin and 1431 in third class.

To the MANCHURIA fell the distinction of making the first voyage of an American liner in regular passenger service to the port of Hamburg. The ship was laden for this first voyage with 9185 tons of freight, chiefly foodstuffs for the famished German people, and including a great number of packages of food and clothing consigned by Germans in the United States to friends and relatives in Germany. She also carried the largest consignment of mail ever sent out of New York on one ship, a total of 14,104 sacks. Owing to the still unsettled condition of affairs in Germany, the ship's passenger list on this premier voyage was not heavy, and her passengers consisted largely of persons obliged to visit the Teutonic countries on official duties.

Sailing from New York on Dec. 20, the pioneer American liner to Hamburg arrived in the River Elbe on Jan. 2. The MANCHURIA steamed into the port of Hamburg like a messenger from the outside world entering a long beleaguered castle. The great docks that had been the pride of the port were vacant of seagoing ships. At one of them lay the half-finished hull of the BISMARCK, designed as the greatest of German liners, where it had been left when Germany threw down the tools of industry to dispatch the supposedly short job of placing the rest of the world under her industrial yoke. At another pier lay the DEUTSCHLAND, once the fastest flyer of the German commercial fleet, now disused and obsolete. At other docks lay ships long idle, rusty and foul. On the piers the grass of five summers had grown and withered. The great warehouses were empty. The waterside streets echoed to the rumble of an

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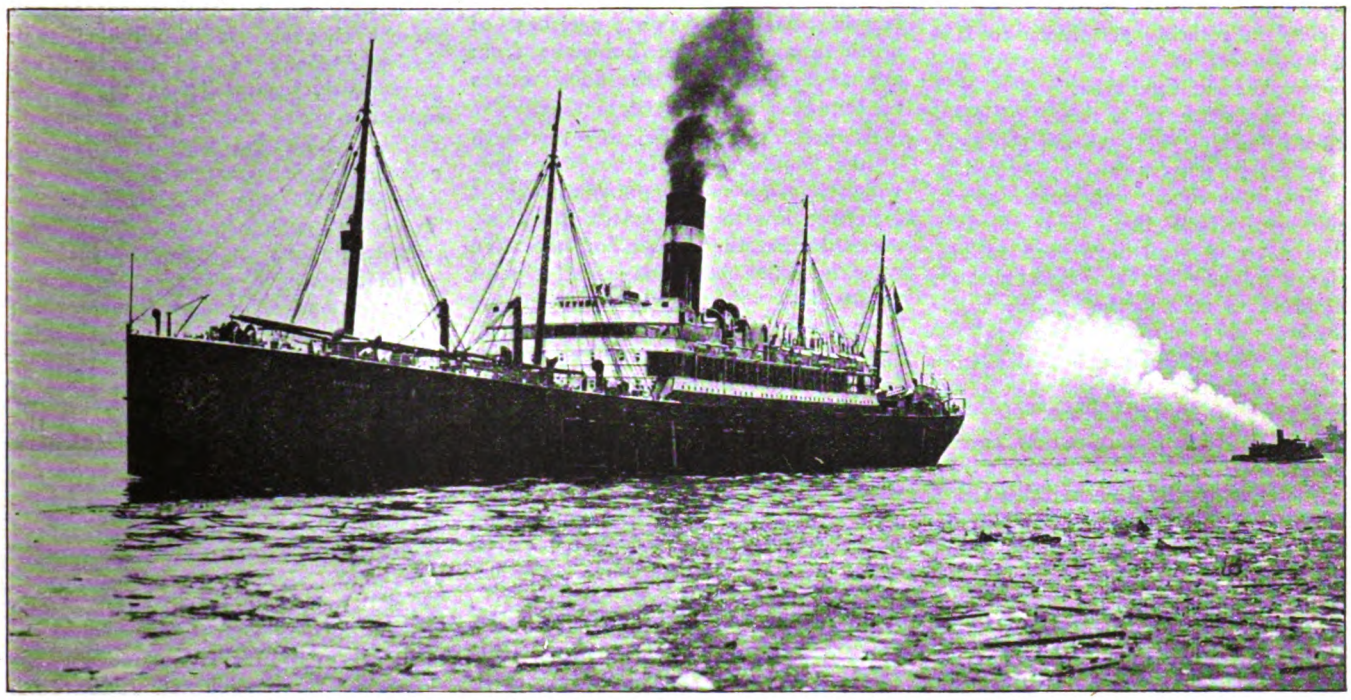
occasional dray, and were peopled only with workers whose listless manner and shambling gait told their own story of discouragement and want of food.

With the coming of the MANCHURIA, the hopes of the people of Hamburg revived. They saw possibilities of using the Americans as a stepping stone to returning sea power. On the MANCHURIA had sailed a representative of the American line, J. J. McGlone, assistant to President P. A. S. Franklin of the International Mercantile Marine, with orders to establish headquarters for the company in Hamburg, secure adequate dock-



S. S. MANCHURIA LEAVING NEW YORK TO REOPEN PASSENGER SERVICE WITH GERMANY

ing facilities, and start business in typically American fashion.

The success of this important mission rested largely on the choice of an able American steamship man. Mr. McGlone, a native of Virginia, had grown up in Mr. Franklin's official family and when assigned to this work had been 31 years in service under that capable chief. Entering the employ of the old Atlantic Transport Co. at Baltimore when a boy, he had progressed slowly and on his merits from the humblest office position, gradually taking a larger and larger share of responsibility in the conduct of the company's business, and subsequently that of the American line, to become finally assistant to the president in the International Mercantile Marine Co. when the two older lines formed the foundation of the greater corporation.

Capacity for quick action, clear observation and straight thinking were demanded of Mr. McGlone to the fullest on his arrival at Hamburg. His first care was to find docking space for the MANCHURIA and the ships of the company's service that were to follow her to Hamburg. Looking at the idle docks and warehouses of the Hamburg-American line—once the pride and boast of the port, and of all Germany—he sought to rent berths at them for his ships. Officials of the Hamburg-American line met him and informed him they would be glad to enter into an arrangement with the American company for the use of the docks. The passenger and freight offices of the Hamburg-American line were at Mr. McGlone's disposal. Indeed, the line would act as agent for the American line, using its old, well trained German staff of officials and clerks, dock employes and others, in booking and handling the American line's German business.

In other words, the Hamburg-American line proposed a partnership arrangement with the American line. Mr. McGlone told the German shipping men that his orders did not extend beyond the establishment of an all-American service at Hamburg. He did not wish to employ the trained clerks of the Hamburg-American service. He had his own staff with him. The Hamburg-American officials, perceiving the situation, withdrew their offers, and withheld from the American line the use of their piers.

The MANCHURIA was duly discharged by the use of lighters while lying in midstream for want of a berth. It was slow business, for the German stevedores were unable to do a normal day's work. Furthermore, they were so famished they had to be watched while handling foodstuffs, or they would stop work and broach cargo, to satisfy their hunger with raw meat. They were the sign and measure of Germany's fall in shipping, as in everything else.

When the MANCHURIA sailed away, Mr. McGlone remained behind. He is in Hamburg now, one of the busiest men in the shipping world of Germany. His first care was to secure headquarters for his staff. After great effort a business building was found adapted to his needs, and was bought. It is a 4-story structure, at No. 2 Borsenbrücke, in the center of the shipping district. Further difficulty was experienced in getting the tenants to surrender possession of the building. Here finally, with his staff about him, the American shipping man began slowly building up the facilities that the line lacked at first. Wharf space was secured for the use of the MANCHURIA and MONGOLIA on their subsequent monthly trips, and for the MONTAUK and MONTANA and other freighters as well. This consisted of three piers in all, one formerly used by the Hamburg-South American Co., and the other two belonging to the government of Hamburg. These piers were at the Hansa dock, toward the upper end of the harbor, where the depth of water was barely sufficient to accommodate the American line ships, which arrived on every voyage deep-laden with cargoes of foodstuffs and other supplies for Germany and the hinterland of Czecho-Slovakia and Rumania.

Mr. McGlone, therefore, sought other docking facilities, as a basis for a future American terminal at Hamburg. After making a survey of the port, negotiations were opened by him for control of a desirable piece of property on which to erect the terminal. These

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are now about completed, and assure the creation of docking facilities for the American line ships that will be unequalled in size and equipment in the harbor of Hamburg.

Facilities for handling passengers are not included in the plans for the Hamburg terminal, as the ships of the line embark and debark their passengers at Cuxhaven, at the mouth of the river, after the former custom of the German liners. The landing facilities here are owned by the Hamburg-American line, but under its contract with the state it cannot bar other companies from using them on a rental basis. The American line representative, therefore, had no difficulty in securing permission to land the passengers of the MANCHURIA and the MONGOLIA at Cuxhaven.

In the absence of a treaty of peace between the United States and Germany, third-class passengers can be accepted by the line in Germany only under special conditions, which limit their number. When a treaty shall have been ratified, a large volume of third-class business will begin to flow to the American line steamers, not only from among the population of Germany, but also from Poland, Rumania, Czecho-Slovakia and other parts of central Europe.

First-class passengers are now carried between New York and Germany almost as freely as if the technical bar of a state of war did not exist; and the temporary deficiency of third-class traffic from Germany is made good on the westward voyages of the MANCHURIA and MONGOLIA by a call at Vigo, Spain, and the Azores islands, where a large third-class business has been developed.

The business of this pioneer American line to Germany is now well organized, on a firm and permanent basis, with a good volume of traffic for its ships both ways, in both passengers and freights. This result has been accomplished without antagonizing any shipping interests, in pursuance of a policy to work in harmony and on a basis of amicable relations so far as possible with every one with whom it comes in contact in its business activities. This policy is carried out through its own offices and agents.

The government-operated Mississippi river barge line has grown so rapidly that it has been found necessary to allot the Bienville street wharf, 1500 feet in length, to that service. Nearly 4000 feet more of wharves and steel sheds are needed immediately to handle the traffic on the New Orleans waterfront.

Plans have been completed for a coastwise service between the ports of New London, Conn., and Norfolk, Va., by the Manufacturer's Association of Connecticut.

River Seeks New Outlet

One of the most important inland waterway meetings ever held in this country has been called for New Orleans, Nov. 15 and 16, by Gov. John M. Parker, of Louisiana. Its object is to devise ways and means to control the flood waters of the Mississippi river; to prevent that stream from seeking a new and shorter outlet to the Gulf of Mexico, by way of the Red and Atchafalaya rivers, and thus leave New Orleans on an inland lake sunk in the channel of the present course of the Mississippi; and to save, if possible, some 2000 square miles of farming land in eight parishes of northern and western Louisiana from annual inundation by the flood waters of the Mississippi river.

At present, approximately one-sixth of the flood waters of the Mississippi, which has a rise of approximately 22 feet from low to high water, are going out through the mouth of the Red river into the Atchafalaya, at a point about 300 miles up the Mississippi from the present mouth at Port Eads. By the new course down the Atchafalaya, the distance to salt water, however, is only about 125 miles, and the big stream, as it doubtless has done many times in the past, is again changing its main mouth, just as the Tigris, the Euphrates, the Ganges and other tropical rivers forming large deltas at their mouths, have done before.

In the course of this change, the extra waters of the Mississippi have enlarged the Atchafalaya from a creek 15 feet wide and 5 or 6 feet deep in 1840, to a river nearly 1700 feet wide and 40 to 60 feet deep in 1919 when the last measurements were made. If unchecked, there is little doubt that the Mississippi will, within the next 10 to 15 years, pour virtually all its waters into the Gulf of Mexico through the Atchafalaya, nearly 100 miles west of its present course, making Morgan City, a town of some 10,000 to 15,000 inhabitants, the port of the Mississippi valley in place of New Orleans.

All this, of course, is of vital interest to every shipowner and to every exporter and importer and shipper in New Orleans, or, for that matter, in the present condition of barge lines and other water transportation, to everyone in the entire Mississippi valley. The problem is, how to prevent the Mississippi from cutting a channel to the gulf, without permitting the flood waters to tear out every levee between the mouth of the Red river, where relief is now obtained through the Atchafalaya, and the great port of New Orleans. One group, headed by United States Senator Joseph E. Ransdell, and supported by the majority of the river steamboat owners, and all the landowners of the northern part of the state, favors the complete separation of the Atchafalaya and Red rivers from the Mississippi, thus forcing the present channel to carry all the waters of the Mississippi.

The other group, headed by a number of prominent Orleanians, including the membership of the Association of Commerce, headed by its general manager, Walter Parker, advocates the putting in of 16-foot sills across the Atchafalaya, supplying the big river with other outlets to the gulf, instead of cutting off all outlets except the present channel. It is admitted that, if the Atchafalaya and the Red are permanently separated from the Mississippi, the water will rise approximately 3 feet at high water at New Orleans, necessitating the expenditure of millions of dollars in higher and thicker levees, and endangering, at every flood season, the city of New Orleans.

The conference, called in November, will be attended by federal government and state engineers, the Louisiana Flood Control association, recently formed to save the 2000 square miles of farms now annually flooded, inland waterway experts, shippers, shipowners, state and city officials and hundreds of property owners along both banks of the Mississippi river. The Louisiana Flood Control association, organized this year, already has appropriated $10,000 for preliminary surveys and reports on methods of safeguarding the large area of farm lands from the flood waters; has elected Judge John Dale, Vidalia, La., president and is preparing for a long and hard battle to obtain the permanent separation of the Atchafalaya and the Red rivers from the Mississippi. Governor Parker probably will attend the conference, but in the capacity of a student of the situation, rather than an advocate of either of the methods so far proposed to remedy a situation which is admittedly the most serious the lower Mississippi valley has faced in many years.

The United Fruit Co. has announced that it will open service between New Orleans and Kingston, Jamaica, soon. This company also has resumed service to Belize, British Honduras, and Puerto Barrios, Guatemala, fortnightly service to Stann Creek, British Honduras and to Livingston, Guatemala.

Dockage charges of $50 to $100 have been put on at Mobile, Ala., for the first time in the history of the port. The charge affects only vessels loading and unloading at the piers of the Mobile & Ohio railroad.

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Open Marine Exhibit at Chicago

Many Shippers, Shipbuilders and Manufacturers Have Displays Which Reveal Country's New Found Power

EXHIBITION of manufactures peculiar to the marine trades began at Chicago on Monday, Oct. 18. The exhibition continues until Saturday, Oct. 23. Plans for this exhibition called for bringing together an opposing array of exhibits as a means of demonstrating to the residents of the middle west the great expansion of America's maritime activities.

The exhibition was planned for the Coliseum at Chicago shortly after the New York show of last April demonstrated the awakened interest of the American people in marine affairs. The most enthusiastic backer of the New York exhibition failed to visualize adequately the interest and appeal of that show. Unlike the country's other great industries, the marine field had never held a thoroughly national exhibition. Shippers, shipbuilders and manufacturers took advantage of the opportunity to a degree which filled the large exhibition space of the Grand Central Palace to overflowing. This success lead to the drawing up of plans for a fall exhibition to be held away from the seaboard and Chicago was the city named. Permanency for the new American merchant fleet rests to a large degree upon the sustaining support of the middle west.

To foster this new nation-wide interest, the National Marine league which initiated the first exposition, has now brought together at Chicago a similar array of exhibits. Through these as well as through the efforts of various speakers during the week, the exhibition is expected to bring more forcibly before the middle westerner the importance a powerful merchant marine has to every section of the country. This is true particularly in the case of the Middle West where the bulk of the manufactured products for export are produced.

In summing up the purpose of the exhibition, the league has pointed out its three-fold object. These are:

First—To focus the attention of the voting population of the Middle West on the great and constantly increasing importance of America's merchant sea power in relation to the maintenance of inland prosperity.

Second—To impress the public of the entire country with the wealth and magnitude of our lake and inland water shipping, to the end that this part of the nation's transportation problem may receive the serious and intelligent attention of both national and state lawmakers.

Third—To provide a market place where buyer and seller of ships, service and marine equipment may conveniently meet and do business.

A subsidiary effect of the Chicago exhibition will be to bring before the country the tremendous strength of the great lake commercial fleet. Even among marine men of the saltwater coasts, the size and capacity of this great and efficient fleet is imperfectly understood. While Chicago itself does not hold first rank in the iron ore and coal trades which are the backbone of lake commerce, sufficient activity is constantly passing through that harbor to awaken visitors to the exhibition to the wonderful development of lake shipping.

Support for the exhibition is evidenced in the following list of exhibitors and a study of their displays demonstrates the rapid progress made by this country in the past few years in developing its manufacturing facilities for producing marine wares.

Complete List of Exhibitors at Marine Exposition

All America Cables, Inc.
Aluminum Cooking Utensil Co.
American Bureau of Shipping
American Car & Foundry Co.
American Chain Co., Inc.
American Library Association
American Steel Foundries
Atlas Sootblower Co.
Benjamin Electric Co.
Brown Portable Conveying Machinery Co.
George B. Carpenter Co.
Consolidated Shipbuilding Corp.
Crane Co.
De Vilbiss Co.
Charles D. Durkee & Co.
Hubbard H. Erickson Co.
Fairbanks, Morse & Co.
Ferguson & Lange Foundry Co.
General Electric Co.
Goodrich Transit Co.
Hanlon-Gregory Galvanizing Co.
International Mercantile Marine Co.
Irving Iron Works
Albert Kingsbury
Kroeschell Bros. Ice Machine Co.
Link-Belt Co.
Luckenbach Steamship Co.
Lunkenheimer Co.
Marine News
THE MARINE REVIEW
Maritime Hydraulic Oil Service
Marshall Field Co.
The McNab Co.
Mercury Mfg. Co.
Metal & Thermit Corp.
Munson Steamship Line
New Process Chemical Co., Inc.
New York Engineering Co.
Niles-Bement-Pond Co.
Oriental Navigation Co.
Pacific Mail Steamship Co.
Pneumercator Co.
Pyle-National Co.
John A. Roebling's Sons Co.
Seamen's Service Center
Simmons-Boardman Co.
South Atlantic Ports Association
Sterno Corp.
Submarine Boat Corp.
The Texas Co.
W. & J. Tiebout
United States Mail Steamship Co., Inc.
U. S. Rubber Co.
U. S. Shipping Board
Valentine & Co.
Wailes-Dove-Hermiston Corp.
White Fuel Oil Engineering Corp.
D. T. Williams Valve Co.
Worthington Pump & Machinery Co.

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Rate Decreases Trouble British

Declines in Ocean Freights Increase Difficulties of Ship Operators—Cargo Liners in Better Position

BY CUTHBERT MAUGHAN
Shipping Editor, The Times, London

THE task of the shipping reviewer is rendered less pleasant in these days by reason of the fact that he has to deal with generally declining rates of freight, involving reduced earnings. Nevertheless, such declines as have been occurring always were foreseen by those who knew that, sooner or later, the law of supply and demand must assert itself and that, in consequence of very large production of tonnage, the high freights realized during the period when tonnage was scarce could not be indefinitely maintained. There is nothing to be gained by not fairly facing the facts, and I propose at once to consider the conditions affecting British shipping during the past three months under the headings set out in the August issue of THE MARINE REVIEW. The division of British shipping then made, which seems to me the most satisfactory one, was threefold, namely: (1) Ordinary cargo steamers, in the past colloquially known as "tramps;" (2) cargo liners; and (3) passenger and mail liners.

Governmental Control Lifted

First, we must notice the freedom from government control which has come about in two stages. Early in July, the British shipping controller announced that, although it would still be necessary, under the defense of the realm acts, to apply for licenses for ships' voyages, all applications then made for ships to proceed on any voyage whatsoever would be granted, unless unforeseen circumstances arose. The shipping controller announced further that he intended to withdraw all limitation rates of freight, as from July 15. At the end of August, the shipping controller made a further announcement that as from Sept. 1 all British vessels would be authorized to proceed on any voyage whatsoever. In order to give effect to this decision a general license was published in the official *London Gazette* of Aug. 31. It stated that the shipping controller, in pursuance of powers conferred upon him by the defense of the realm regulations, "hereby licenses until further order any British ship to which the said regulation applies to proceed to sea on any voyage whatsoever."

Now, as long as shipping control was rigidly enforced, shipping managers were accustomed to look forward to the time when the so-called shackles on their industry would be removed. State control for enterprising managements naturally is in many ways galling since, by telling them precisely what they must do and must not do, it kills initiative. Still, as events have developed, many owners probably were far better off financially under control than they have been during the brief period in which they have had their freedom. This has been not because there has been any merit in control which should be preserved in peace time, but because the ordinary commercial considerations have had freedom to come into play. When shipping was under control it was rationed, and the only justification for rationing would seem to be an inadequate supply of any particular commodity. But for such rationing, supplies would go to the highest bidder and those who could not afford to enter into such a competition would suffer.

Control must, in any case, if it had not been removed, have been rendered absurd by the state of the freight market. For instance, the official July announcement stated that all limitation rates of freight would be withdrawn. To the ordinary reader, provided with no explanation, this might have seemed that rates would climb at once. As it happened, lower rates of freight were then ruling in the open market than those which had been fixed early in the year for some government cargoes. It will be seen that in the accompanying table the highest rate for grain from the River Plate to the United Kingdom is given as £5 7s 6d. This was the government rate of freight ruling down to July 15. But at that time tonnage could be secured in the open market at £3 10s 6d, or less by £1 17s than the government rate. With freights generally so much lower the government rates of freight could not well be justified. After the rates had been below £5 for some time, a strong demand for tonnage to load maize in the River Plate for Europe has again brought quotations to about £5 7s 6d a ton.

Reference to the cessation of government control is made under the heading of ordinary cargo steamers, because it was really these which were mainly affected by the continuance of some form of state control. The system of requisition, in which all the liners were included, came to an end last year, and from that time onward licenses were granted for all the vessels in a liner fleet to carry on a number of services. The government thus knew exactly where the vessels were if, in any emergency, they were required. It was necessary, however, to secure permission for each individual voyage of the ordinary cargo steamer as it was arranged, in accordance with the market conditions ruling in the freight markets.

Time Charter Rates Drop

One of the chief indices of the state of the freight market is the time-charter rate, that is, the monthly rate of hire for which ordinary cargo steamers can be secured, the owners providing and paying the wages of the officers and crew, and the cost of stores, and the firm which obtains the use of the vessel paying for the coals, port dues, etc. At the end of the last quarter the rate was declining and in the table inserted in the last review article the highest rate was given as £1 4s and the lowest rate 17 shillings 6 pence per ton. Since then the rate has been reduced gradually to about 12 shillings a ton, at which it is believed vessels could freely be secured for periods of six months.

It happens that the demand for tonnage on time charter has shown a great falling off. As is generally known, there was, following the armistice, a large demand on the part of the north Atlantic shipping companies for tonnage on a time-charter basis to supplement the vessels remaining in their ordinary fleets. Then, when the exchange difficulty was accentuated, this demand fell away and the liner companies began to find difficulty in filling their ordinary steamers. On the other hand, the delays in port while vessels were waiting for bunker coal, together with uncertainties in the labor situation, inclined many owners to charter their vessels if they could do so and be relieved of further responsibilities of management. When it is remembered that, at the beginning of the year, similar ships were being chartered at 30 shillings a ton, the present drop to 12 shillings

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a ton is remarkable. Fortunate were those owners who had the wisdom and the opportunity to charter their ships to strong firms in the early part of the year for 12 or more months.

The statement has been published that the estimated cost to an owner of maintaining a cargo steamer at sea at the present time is 10 shillings a ton, and, although this estimate has been repeatedly given, it has not been challenged. It will be seen, therefore, that a time charter rate of 12 shillings a ton still leaves a margin of profit, although a very small one compared with the handsome margin which was left by the high time-charter rates of a few months ago. The present margin still may be satisfactory in the case of ships built many years ago at the lower prices then ruling. It is difficult to see, however, that it can be an attractive rate for owners who have bought tonnage on the high prices ruling during the past few years.

Summer Months Quiet

The months of July and August comprised, in the years before the war, the quietest period in the whole of the 12 months. All the big crops had been moved, and the new crop movement of the autumn had not begun. The past July and August have been exceedingly quiet in the freight market, and for some weeks owners were buoyed up by the hope that in September the demand would assume a much brighter aspect. The autumnal demand has, however, been very slow in developing. For some reasons—probably partly financial and partly owing to a lateness of the crops—any revival of activity has been very backward in showing itself. There can be no question that the condition of the open freight markets would have been highly unsatisfactory but for the new trade movement in coal. The falling off in the production of coal in the United Kingdom and the consequent decline in exports has been a bad thing for the trade of the United Kingdom. Large coal exports before the war were of great service to the British shipping industry, since they enabled British ships to make outward and homeward voyages with full cargoes. They left the ports of the United Kingdom laden with coal, and they came back laden with the grain and other crops grown in the great producing countries. When these outward cargoes of coal were no longer available, it was feared that British shipping would suffer severely.

Then new factors came into play. Ships found employment in bringing coal from the United States to Europe, from South Africa to the Mediterranean, and even from Australia to the Mediterranean and Scandinavian countries. Thus a new set of comparatively long voyages was established, which would not have seemed possible before the war. Ballast voyages, which years ago would have seemed quite uneconomic, have become common. It stands to reason that when these are necessary, the whole cost of the round voyage has to be borne by the single voyage, instead of being distributed over outward and homeward voyages. This fact must tend to maintain the cost of importing foodstuffs into the United Kingdom. Freight rates are still substantially higher than they were before the war, but the costs are also higher, so that it does not follow that the net profit is or will be any more satisfactory than it was in some of the lean prewar years.

Owners are frequently heard saying that the time is not far off when it would be better for them to lay up cargo tonnage than to attempt to operate it at the market rates of freight.

Cargo liners have been in a rather more favorable position than the owners of ordinary cargo vessels because their rates are fixed for long periods. The freights of the cargo liner companies never touch the extreme, either the highest or the lowest of the ordinary cargo vessels; they pursue the more or less even tenor of their way. Yet they have been feeling the effect of a falling off in the cargo offered, and the competition of tonnage owned in Scandinavia and elsewhere has been apparent.

Liner Trades Favorable

An interesting little development recently has taken place on the continent, where a Dutch line has inaugurated a service competitive with that of the British lines to South Africa. The South African trade in past years seemed almost to be the stormy petrel of shipping. There has been more than one rate war and there have been at times sharp differences of opinion between the shipping companies and the merchants. The Dutch line has recently quoted lower rates than those agreed upon last year, between the British shipping companies and the merchants. The British companies have replied not by an ordinary further cutting of rates, which was the form a "rate" war" took in the past, but by entering into an undertaking of a special kind with the merchants. They have promised to carry goods shipped by merchants in British ships one week before or after the sailing of foreign competitive vessels with similar goods from the continent, at rates of freight 20 shillings per ton less than those charged for the competitive ships, with a minimum low rate of freight of 10 shillings per ton. It is hoped that by such an arrangement the interests of British merchants will be adequately safeguarded, while the losses of the British shipping companies, on the other hand, will be satisfactorily limited.

Another important development has been the conclusion of an agreement between the Canadian Government Merchant Marine, Ltd., and British shipping companies for services from both the Atlantic and Pacific ports of Canada to the Far East. These agreements are of particular interest because they represent an alliance between a government enterprise and a private undertaking, which various shipping authorities have maintained would be unworkable. Happily, the management of the Canadian Government Merchant Marine, Ltd., has adopted a policy of inaugurating new

British Shipping Index

PRICES OF REPRESENTATIVE SHIPPING SECURITIES IN THIRD QUARTER

Securities	Highest £ s d	Lowest £ s d	Date
Cunard shares par £.....	1 8 9		July 8
		1 2 6	Sept. 8
Furness, Withy shares, par £	1 15 9		July 9
		1 9 0	Aug. 9
P. & O. deferred £100 stock	470 0 0		July 12
		390 0 0	Aug. 10
Royal Mail S. P. Co. £100 stock	120 0 0		July 12
		105 0 0	Sept. 10

SHIP CONSTRUCTION FIGURES FOR UNITED KINGDOM IN THIRD QUARTER OF 1920

	No.	Gross tons
Tonnage launched	144	483,057
Tonnage commenced	170	593,821
Tonnage building, Sept. 30..	961	3,731,098

SHIPPING MANAGEMENT FACTS THIRD QUARTER 1920

	Highest £ s d	Lowest £ s d
Time Charter Rate: Ordinary British cargo steamers per ton D. W. per month	17 6	12 0
Voyage Rates:		
Plate—U. K. grain, per ton	5 7 6*	3 10 6
Australia—U. K. grain, per ton	7 10 0*	5 15 0
Cuba—U. K. sugar, per ton	4 5 0*	4 5 0
Fuel		
Coal: Best Welsh large at S. Wales, per ton	4 0 0	4 0 0
Oil: Per ton at Port Said	15 0 0	15 0 0
Wages: A. B. seamen per month	11 10 0†	
Boatswains per month	13 0 0†	
Firemen per month	12 10 0†	

*These were the government rates for directed voyages

†These rates are all subject to an additional "war bonus" of £3 a month which is still maintained. They are fixed by the national maritime board on which both owners and seamen are represented.

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services and of willingness to work with the existing shipping organizations, instead of against them.

There is reason to believe that the British shipping companies in entering into the agreement have been influenced by the provisions of the United States Jones shipping act, whereby authority is taken to secure preferential railway rates for goods to be shipped in United States vessels, and for granting preferential treatment to United States vessels at United States ports. There is a strong body of British shipping opinion which believes that exacting provisions are unlikely to be put in force in the United States against British shipping. Yet owners feel that they cannot entirely overlook the existence of such legislation.

There is good reason to believe that the question of considering the desirability of securing preference for British vessels in the ports of the British Empire is likely to receive shortly the careful consideration of British shipping authorities. It is much to be hoped that measures of this kind will not become part of the conduct of shipping in future. There is no doubt that British owners, as a body, would prefer trade open to all, if only because they dislike any form of government interference with ordinary conditions of trade.

Some liners are among the vessels which have been allotted to the United Kingdom as its share of the ex-German tonnage, and for good steamers there is likely to be quite an active demand.

Passenger Tonnage Inadequate

The governing factor in passenger liner business is the insufficiency of the present supply of vessels of this type. No British passenger liners were built during the war, and a great impression has been made by a recent speech of Sir Thomas Fisher, the new general manager of the Canadian Pacific Ocean Services, Ltd., when, at the launch last month of the EMPRESS OF CANADA, of 22,000 tons, from a Clyde shipyard, he said that the estimated cost of the vessel was £1,700,000, as compared with a price of £500,000 which such a vessel would have cost before the war.

Allowing for the interest on the increased capital and costs of operation, the estimated cost of a round voyage across the north Atlantic of a liner of the EMPRESS OF FRANCE type (about 18,500 tons) would, he declared, be £60,000 more than the cost of a round voyage of a similar ship before the war. He went so far as to say that, unless a stop could be put to the general rise in shipbuilding costs and operation costs, the result would be disastrous for the British nations, for which easy communication is essential.

In many directions at present the supply of passenger accommodation is inadequate to the demand. For instance, very large numbers of persons who wish to travel to India this autumn will be unable to do so because berths are not available. While many persons are under the necessity of traveling, the present high costs may be a minor consideration, but it has to be remembered that the abnormal conditions will not always obtain. Many people who were unable to go to sea for six years naturally now wish to travel for personal or business purposes, and they feel compelled to travel if they can possibly do so, in spite of the cost. When this exceptional demand has been satisfied, the public is likely to think very long before paying such rates as are now being quoted.

Liner Situation Abnormal

To sum up, the passenger liner situation is still abnormal, and the lack of suitable ships is likely to be felt for some little time. Efficient cargo liner companies, which have long followed a conservative financial policy, will no doubt be able to pass satisfactorily through the difficult times which are generally expected. The cargo ownerships as a rule, have done well during the past few years and some of the old established organizations have disposed of their fleets during the past few months to newly formed concerns. Cycles of good years and lean years for the ordinary cargo vessels have often occurred, and if there are somewhat trying times immediately lying ahead, the good times come again later.

There was certain to be difficulty in readjustment of shipping to after the war conditions and it cannot be overlooked that substantial proportions of the world's population are not yet hard at work again. When all the world is once more settled down to work energetically, there should be more opportunities for new shipping services.

Recent filing and indexing of old records by the Louisiana Historical society brought to light the fact that the first steamboat on western waters was the NEW ORLEANS, which started down the Ohio 109 years ago, in 1811, arriving in New Orleans, Jan. 10, 1812, four months after starting. This pioneer craft was built by Nicholas J. Roosevelt, great-grand-uncle of the late Theodore Roosevelt. St. Louis was not visited by a steam vessel, however, until 1817. Mississippi steamboating reached its high-water mark in the 15 years from 1855 to 1870.

Oil Output Gains

The actual oil-production situation in Mexico, according to report of the Mexican government, appears to be improving rapidly. Exports for June reached the record total of 11,300,000 barrels, while that for May was just behind it with 11,200,123 barrels, the largest since March, 1920, when approximately 10,000,000 barrels were shipped out. The reason for the hiatus in production in April is not given in the report. It is stated that the Mexican government contemplates the erection, by means of subsidies, of a refinery for gasoline and lubricating oils, near the Tampico field.

The June export was the greatest quantity of oil ever shipped out of Mexico, and all came from the Tampico, Tuxpam and Port Lobos fields, situated on the gulf coast of the republic. The experts of the government estimate that the total production in 1920 will be at least 140,000,000 barrels, as against 88,000,000 in 1919. This will be about one-fifth of the total production of petroleum in the world, and the report declares that if proper pipe line facilities and sufficient tankers were provided, the Mexican fields could supply one-third of the world's production.

Some 20 companies furnished the record June output, headed in point of quantity by the Huasteca Petroleum Co. (American) of which E. L. Doheny, Los Angeles, is the head. El Aguila (British) of which Lord Cowdray, better known as Sir Weetman Pierson, is the president, came second, and the Standard Oil Co. of New Jersey, third. While new pipe lines have been laid, and loading facilities increased in the harbor of Tampico and shipments abroad largely augmented by these aids, production is still far in excess of capacity for handling it. The report says:

"Mexican petroleum production for 1920 would equal one-third of the entire world output if there were adequate facilities for shipping the oil. At present, there are pipe line accommodations to handle about 200,000,000 barrels a year, with tank steamers operating in sufficient numbers to carry 150,000,000 barrels a year. This would leave about 50,000,000 barrels in reservoirs or tanks, to be added to another 50,000,000 barrels the next year and so on. If the combined tank fleets of the various maritime nations of the world were put into the Mexican oil service, in place of the one-fifth of all the tankers in the world now operating there, the productive capabilities of these fields would insure full cargoes for these tankers 365 days in the year."

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Starts New U. S. Line to Europe

American Operator Places First of Shipping Board's Combination Liners in Service—Accommodations Are Unexcelled

UNDER the auspices of the United States Mail line, the shipping board has inaugurated a passenger and freight service between New York and London with the newly constructed ship PANHANDLE STATE. This is one of the passenger vessels built by the New York Shipbuilding Corp., Camden, N. J., for the shipping board. Originally she was designed as a troop ship; but after the armistice was turned into a combination boat for commercial services. This type of vessel was described fully in THE MARINE REVIEW of July, 1919, and August, 1920. The vessel, as completed, measures 502 feet in length, and has passenger accommodations for less than 100 persons. But all the public rooms and staterooms are luxuriously appointed, and only one class of passengers is carried. The vessel measures over 10,000 tons net and, therefore, has ample space for a prosperous cargo business.

Two other sister ships, the OLD NORTH STATE, to be delivered in October, and the CREOLE STATE, will be allocated to the United States Mail for operation in the London run. This run is a new service the government is hopeful of developing. While the line of ships is to be operated by the United States Mail, it is for all practical purposes distinct and separate from other business of this company. The United States Mail has acquired on contract from the shipping board many of the ex-enemy passenger vessels, which it will use in its own operations. The London services belong solely to the shipping board, the United States Mail line merely being the agent for the government. Moxon, Salt & Co., the London agents for the United States Mail, will act as London agents for the shipping board line as well.

Although these ships probably will make their largest return from freight, the passenger accommodations are made most attractive. It is understood to be the intention of the operators to have these ships known as the "bridge-table" vessels, inasmuch as their limited capacity and their more leisurely passage of the Atlantic will offer an inducement to small parties desiring a crossing in comfort and exclusive company.

It is in the interior decoration and modern improvements that the new liners have their charm. The decorative features are from the designs of American architects and follow closely the colonial period. Mahogany and white compose the main color scheme in dining saloon, library, lounge and other public saloons, while the smoking room is finished in fumed oak.

The chief interest of the voyager, however, is in the stateroom. While some are larger than others, none is small and all are identical in design and furnishing. There are no berths in any of the rooms. In their place beds of steel, finished mahogany color, have been substituted. The appointments of all the staterooms, in fact, are not surpassed on any ship afloat or any hotel ashore. Many of the rooms have private baths and all have hot and cold running water. Cunard is building some so-called "intermediate" vessels. Many foreign shipping authorities have prophesied that "intermediate" vessels will be the carriers of the future. Their plans, however, are all in the future. The shipping board is the first agency actually to make a start with this kind of vessel and to attempt to develop a service on a new run. Shipping men therefore, are watching the outcome of this experiment with considerable interest. Success for the venture, naturally, depends upon whether the idea is one that appeals to the traveling public.

The PANHANDLE STATE was able to make 16 knots on her trials, although this is a speed greater than called for of the contractors. The operators are hopeful of making a record run across the Atlantic with her, although it is not anticipated she will make her best time on the first trip over. Normally the run over from New York to London on these vessels will be of either eight or nine days duration. The operators had but a few weeks to advertise her before she left on her first trip in September, and consequently only 15 passengers were booked out of New York. This list would have been increased considerably had not the British government refused permission to all ships to stop at Queenstown on the eastbound voyage. It is the plan of the shipping board to have these vessels make stops at Queenstown, when permitted, and at Boulogne as well as London. The run therefore is designed to appeal to Irish and French travelers as well as those going to London.

The small booking on the first eastbound run is no measure of what may be expected, as this movement is today at its lowest ebb, and the PANHANDLE STATE was inadequately advertised. The percentage of accommodations booked, however, was comparable to the percentage booked on the average steamship leaving New York during the same week.

When leaving New York, the PANHANDLE STATE was in command of Capt. Clarence M. Stone, a veteran skipper, who, like most of the other officers aboard, served in the United States navy during the war.

C. H. Marshall, who has been manager of the operating department at New Orleans, has been made shipping board agent at Galveston, Tex.

"Terrors" of Trip on Panhandle State

A NEW transatlantic passenger, mail and cargo service is shortly to be established between New York, Queenstown, Boulogne and London.

The first steamer the PANHANDLE STATE *(so called after an unorganized tract of land in Texas) has not yet been to sea.*

A 10,000 *tons vessel of about* 14 *knots, she was laid down as an army transport; but after the armistice her plans were changed to those of a passenger liner.*

With her sisters, she is among the ugliest boats now afloat, having five "stunt" masts and an enormous funnel. She is built on absolutely straight lines from stem to stern.

Against the popularity of the new service are the facts that the new ships which will fly the American flag are "dry."

Also, to crowd a greater number of passengers on board, the majority of the berths are "across" the ship instead of fore and aft, with the result that the rolling of the vessel produces a most unhappy motion for the traveler who takes to his bunk to avoid sea-sickness.

Instead of rolling from side to side, the passenger's head is flung up and down with every wave.

British designers abandoned this system over 50 *years ago.*

The American government built 17 *of this class of boat, and most of them are to be run on the Pacific trade.*—Daily News, London, England.

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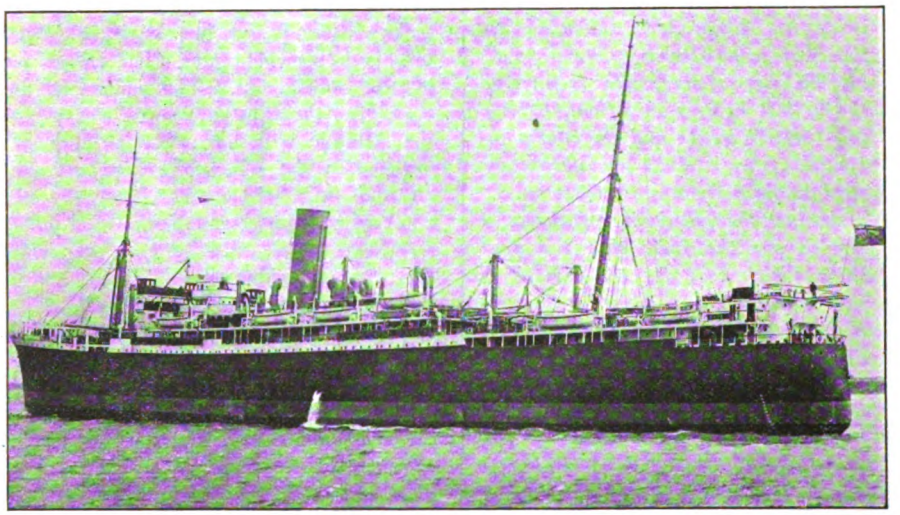
Launch Turbine Liner

Messrs. Cammel, Laird & Co., Ltd., dropped into the water at their Birkenhead, England, shipbuilding and engineering works, in December, 1919, a large twin screw passenger and cargo steamer for the South American service of the Pacific Steam Navigation Co. She was given her trial trip late in September.

The vessel, named OROPESA, is of the following dimensions: Length, 552 feet; breadth molded, 66 feet; depth molded to shelter deck, 45 feet; gross tonnage, 14,500 tons. She has a loaded displacement of 24,000 tons and is designed to steam at a speed of 14½ knots per hour at sea, when loaded to a mean draft of 28 feet.

A cellular double bottom extends fore and aft and is subdivided into numerous watertight compartments which are used for carrying ballast, fresh and reserve feed water. Fresh water tanks are arranged also alongside the shaft tunnels.



PACIFIC STEAM NAVIGATION CO.'S LINER OROPESA

Accommodation is provided for 143 first class, 131 second class and 366 third class passengers. Second class passengers are accommodated in state rooms at the aft end of the upper deck. Third class passengers are accommodated in state rooms under the forecastle and upper decks and in open berths at the fore end of the upper deck. First class passengers are quartered on the shelter deck amidships. Single berth cabins with cot beds are a feature of this accommodation.

Cargo is handled by means of steel tubular derricks fitted to the masts and four special steel derrick posts, two forward and two aft, giving two 10-ton and two 5-ton on the main mast, four 10-ton and four 5-ton on the fore mast, four 5-ton on each of the after posts, two 5-ton on each of the forward posts. The cargo is worked by 11 8 x 12-inch winches substantially fastened to the deck by girders. A large specially designed crane is fitted on the forecastle head for working the anchors when required.

The coaling for the ship is done by means of large coaling hatches on the boat deck which extend to the bunkers and 'tween deck holds. Four steel derrick posts are fitted with two 3-ton steel tubular derricks attached to each for working the coal, power being supplied by the four 8 x 12-inch boat winches. The new vessel is fitted with two powerful warping capstans and two special fairleads for working the ship when going through the Panama canal.

The main machinery consists of two sets of Parsons double reduction geared steam turbines of the latest improved type, driving twin screws. Each set of turbines consists of one high pressure, one intermediate, and one low pressure turbine, coupled to the main shaft by means of double reduction gearing; compound astern turbines of the impulse reaction type being incorporated in the intermediate and low pressure casings.

Propeller revolutions at full power will be about 95 per minute, while the turbine revolutions will be 3500 per minute for the high pressure and intermediate turbines and 1800 per minute for the low pressure turbines.

The main condensers are suspended from the low pressure turbines and are designed for a high vacuum.

The main thrust blocks are of the Michell type and the twin propellers have bosses of cast iron with separate blades of manganese bronze.

There are four double-ended boilers of the cylindrical marine type working at a pressure of 190 pounds per square inch. Each boiler has eight furnaces and the boilers are designed for natural draft.

Analyzes Rhine Traffic

Shipping possibilities on the Rhine are analyzed in a recent report of the American consul at Coblenz, Germany. The Rhine is navigable, for at least two months of the year, for over 500 miles, or as far upstream as Basle, Switzerland. Except for occasional winter floods and very rare ice jams it is open throughout the year as far up as Mannheim. Seagoing vessels of light draft (9 to 10 feet) operate up to Cologne. Before the war some 60 of such vessels called regularly at Cologne, but now only about six vessels make that port.

The swift, shallow nature of the Rhine compels the use of strong tug boats and barges of light draft. Thus upstream to St. Goar, a 1000-horsepower tug draws about four barges of a total of 4000 tons burden. From St. Goar to Bingen, on account of the swift current, only two such barges can be towed by tug. So in the vicinity of St. Goar and Salzig, barge tows are split up and extra tugs used. From Bingen to Mannheim the same tug tows six or seven barges; from Mannheim to Strassburg, the river being very shallow (only 2 meters) only three barges make a convoy; from Strassburg to Basle, only one barge at a time is towed, and this only in June and July.

The river from the Basle to the sea is without locks or other hindrances to navigation. The bridges, which are rather numerous, have ample clearance for the craft at present operating on the river except at very high stages of the water. The depth of the river fluctuates considerably. In the summer, the water at times falls so low as to require that barges be loaded to about 60 per cent of their capacity. In winter, the high water stops all navigation on account of the impassability of the bridges. Ice appears to be a negligible factor in impeding navigation except in conjunction with the floods.

The velocity of the current varies considerably in various portions of the river from 1 to 5 miles per hour, depending on the width and depth of the stream. The average upstream speed is about 3 kilometers per hour. For example, it takes about 15 days for a barge to navigate from Antwerp to Coblenz. From Duisburg to Mannheim the time occupied is eight to 10 days, or about 70 steaming hours. This section of the river is the one mostly used for freight transportation.

The Rhine has a number of canals and streams flowing into it, which

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are also navigable, thus giving water transportation to a vast area in western Germany and eastern France.

A canal links Strassburg with the Marne river of France and is navigable for vessels of about 290 tons burden. The length of it is 104 kilometers to the old French border.

The Neckar river flows into the Rhine at Mannheim. It has a navigable depth of 1½ meters for about 188 kilometers above Mannheim. At Mainz, the River Main joins the Rhine; it is navigable for 392 kilometers above Mainz, and barges of 1600 tons capacity can be operated. The Lahn river runs into the Rhine just above Coblenz, and it is navigable for 140 kilometers for vessels of 190 tons. The Moselle river, which joins the Rhine at Coblenz, is navigable to Metz, 300 kilometers from its mouth, for vessels of 160 tons burden, and for 196 kilometers for vessels of 800 tons burden. The Ruhr river, which flows into the Rhine at Duisburg-Ruhr, is navigable for about seven months of the year for vessels of about 160 tons for a distance of 75 kilometers. The Meuse river joins the Rhine at Gorinchen.

Brest Wants U. S. Trade

Brest aspires to become the leading French Atlantic port in Franco-American communications because of its geographical location and its natural facilities. The Comité d'Action pour la Mise en Valeur du Port de Brest presents a series of facts and statistics in the *Review* of the American chamber of commerce in France tending to show that Brest as the transatlantic terminal possesses the advantage of the shortest distance and at the same time the best natural deep water harbor. The harbor of Brest can receive the biggest ships, and in the matter of speed big ships incur a running expense relatively lower than that of small ships.

In the port of Brest, which is accessible in all kinds of weather, the low-tide depth in the roads is 18 meters. This can be compared with the depths in other cities as follows: New York (Ambrose channel) 12 m., Lisbon 11 m., Liverpool (Queen's Channel) 10 m., Cherbourg 10 m., Southampton (Empress Channel) 9 m., Fishguard 9 m., Antwerp (Chenal de l'Escaut) 8 m., Bordeaux (Chenal de la Gironde) 7 m. 50, Saint Nazaire (Barre des Charpentiers) 7 m., Le Havre (chenal) 6 m.

The roads at Brest constitute a vast natural port protected against the winds, with a water surface of 15,000 hectares, of which 5000 hectares have 12 meters of depth and 1500 hectares more than 20 meters. As regards distances, following are some of the comparisons: New York to Antwerp, 3325 miles; to Havre, 3130; to Cherbourg, 3066; to Saint-Nazaire, 3063; to Brest, 2954. Colon to Antwerp, 4820; to Havre, 4607; to Liverpool, 4555; to Brest, 4412. Rio de Janeiro to Antwerp, 5272; to Havre, 5077; to Brest, 4837.

Thus it is argued that, from the speed point of view, the fastest boats could cover the Brest-Sandy Hook course in about 24 hours less time than the Havre-Sandy Hook course.

During the war, Brest received more than a million American soldiers. From March to November, 1918, a dozen of the big vessels, of 15,000 to 25,000 tons, and among them the LEVIATHAN, of 54,000 tons, arrived each month with 150,000 to 200,000 troops, as well as enormous cargoes of war material and supplies, and without a maritime accident of any kind.

The port of Brest was improved greatly during the war, and its merchandise tonnage increased in large proportions. Some of the figures showing merchandise unloaded are: 1913, 356,000 tons; 1916, 540,000 tons; 1917, 649,000 tons; 1918, 929,000 tons.

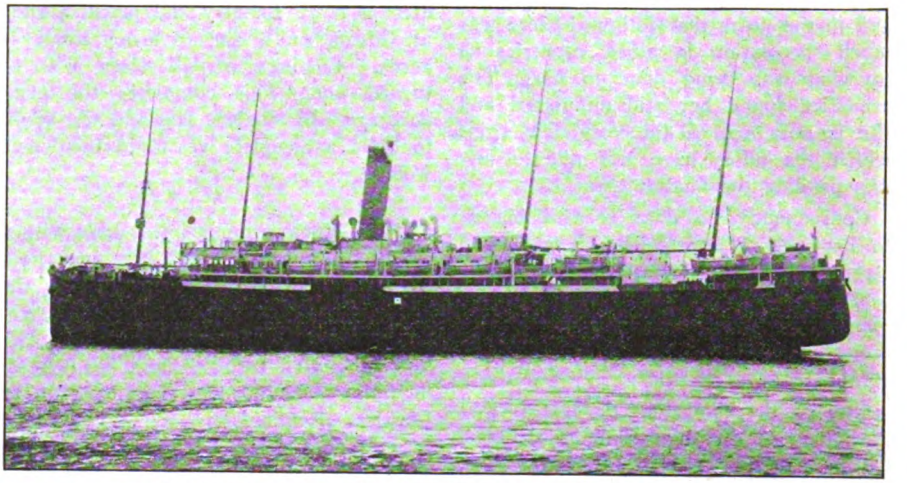
A new contrivance for unloading bananas has been invented by William Steckler, an employe of the New Orleans dock board. It is said to save 2½ cents a bunch on the cost of unloading bananas, a saving of about $500,000 a year on the average total imports of 20,000,000 bunches, with another saving in the greater rapidity with which the fruit boats can be unloaded. The invention is an overhead monorail system which carries the bunches direct from the Harris-Edleson unloader at shipside to the freight cars. Under the present system with men carrying bananas from the unloaders to the cars, the unloaders are idle 20 minutes in every hour.

New Liner in Service Out of England

The large, twin-screw passenger steamer YORKSHIRE, built for the Bibby line by Harland & Wolff, Ltd., Belfast, Ireland, has sailed after running successful trials in Belfast Lough. Her principal dimensions are: Length, 504 feet; breadth, 58 feet, and depth, 35 feet, with a gross tonnage of 10,500.

The YORKSHIRE has a double bottom extending fore and aft with eight watertight bulkheads to the awning deck, dividing the ship into nine watertight compartments. She will carry over 300 first class passengers. Staterooms are arranged on the tandem principle giving daylight and fresh air to all rooms.

The new steamer is equipped with a complete electrical installation. The main generators are situated in the engine room and consist of enclosed forced lubrication engines driving dynamos of the multipolar type. Each dynamo has an output of 55 kilowatts. An additional dynamo driven by an oil engine is installed aft well above the water line, from which the lighting, wireless telegraphy, signal lanterns, pumping appliances, steering gear and watertight doors can be operated if necessary.



YORKSHIRE, NEW BIBBY LINER BUILT BY HARLAND & WOLFF

Harland & Wolff's latest type of electrically operated watertight doors are installed and can be closed from the captain's bridge, indicators being provided to enable the captain to see at any time the exact position of the doors.

The YORKSHIRE is propelled by twin screws driven by two sets of geared turbines, each set having a high and low pressure turbine, the power being transmitted to the propeller shafting through double helical teeth gearing. The condensers are of the latest design, having independent air and circulating pumps. Steam is supplied by four cylindrical boilers which can be fired with coal or oil fuel as may be desired.

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What the British Are Doing

Short Surveys of Important Activities in Maritime Centers of Island Empire

FORTY-TWO ex-German liners and 32 cargo boats, 74 vessels in all, are being offered for sale in Great Britain. Lord Inchcape, who was successful in disposing recently of all of the ships built by the British government during the war, is again acting on behalf of the ministry of shipping. The largest and most important ship, the BISMARCK with a gross tonnage of 56,000, was under construction for the north Atlantic service of the Norddeutscher Lloyd in 1914. When war broke out and in the years that followed there was much speculation in allied countries as to what was being done to her. The armistice found her still unfinished and she is now one of the very few ships which the allies have not put to any use, pending the final settlement.

Consequently no data is available as to her cost of operation. The second largest ship, the IMPERATOR, of 52,000 tons, is already well known on both sides of the Atlantic. The other steamers range in size down to the smallest of only 1117 gross tons.

One of the conditions of sale is that the names of the ships shall be changed, the new names selected to be approved by the board of trade. Offers are being received by Lord Inchcape and on acceptance of the offer 10 per cent of the purchase price is to be paid within two days, the balance to be paid on delivery of the vessel. Delivery will be made to a port in the United Kingdom after the vessel is drydocked for examination. A surrendered floating dock exceeding 700 feet in length with a lifting capacity of 40,000 tons, has arrived at Sheerness, England, from Kiel. Twelve tugs were required to tow it to its berth near Port Victoria.

* * *

THE dispute between the platers and their helpers employed in many of the Clyde, Scotland, shipyards regarding an advance of wages awarded several months ago is getting worse and a general lockout in the Clyde yards is probable. In this case the dispute is between two classes of workers and the employers do not enter into it, except to suffer from its results. Teamsters working at the docks in the Liverpool district are clamoring for an increase of 16 shillings a week (about $4), which if granted will mean an average wage of £4 7s to £4 16s ($15.20 to $16.75) according to the size of the team. The firm of Harland & Wolff, Belfast, Ireland, has proposed to the shipbuilding and Engineering federation that wages be stabilized for a period of two years. The first union to reply to this proposition is the Painters' society, which rejects the offer and is attempting to secure a 25 per cent advance in wages.

* * *

FROM Glasgow, Scotland, comes the news that Harland & Wolff will erect a large foundry and machine shop at Govan, on a site covering about 40 acres. Castings of all sizes will be turned out. This completes the plant necessary to enable Harland & Wolff to build a complete vessel in their own works.

* * *

THE YORKSHIRE, 504 feet long with a tonnage of 10,500, has just been completed for the Bibby line and is the largest of their fleet. The vessel is propelled by twin screws driven by two sets of geared turbines, and has accommodation for 300 first-class passengers. Charles Rennoldson & Co., South Shields, has launched the INSTON, 270 feet long, for S. Instone & Co., Ltd., London, for a special trade. Sir Raylton Dixon & Co., Ltd., Middlesbrough, has delivered to French owners an 8900-ton steamer fitted with quadruple expansion engines. Eight similar vessels are to be built for the same owners. Other launchings in the northeastern district are the SILENE, 7000 tons, for a French firm; and TREBARTHA, 8300 tons for the Hain Steamship Co., Ltd., St. Ives. In the Clyde shipyards there is a record output of tonnage for the first eight months of the year, 139 vessels aggregating 430,244 tons having been launched. To this total August contributed 24 ships with a gross tonnage of 79,982.

* * *

TWO and a half years ago the BEN-MY-CHREE a fast British turbine steamer of 2650 tons was wrecked in the Mediterranean. Before the war she was employed in the Isle-of-Man Steam Packet service and was converted by the admiralty into a seaplane carrier. In January, 1917, she entered the harbor of Kastelorizo, off the coast of Asia Minor. Her captain Commander C. R. Samson, knew nothing of the carefully concealed Turkish batteries in the harbor and at this close range, being only lightly armed, the ship was doomed. She was abandoned in a sinking condition with her decks and upper works practically destroyed by fire. The Ocean Salvage Co., Ltd., has now raised the vessel which will be towed to Piraeus and handed over to Lloyd's agent, acting for the British ministry of shipping. The salving of the ship was rather a formidable task; a cofferdam had to be constructed and numerous shot holes plugged to make the hull watertight before pumping operations could be commenced. Timber for this work had to be carried over 520 miles by sea from Constantinople. A quantity of shells, torpedoes and aerial bombs were found in her and the corrosive action of salt water made the handling of these explosives a risky task.

* * *

THE Field Line (Cardiff) Ltd., which has been in existence 20 years has decided to voluntarily wind up its affairs. The scheme provides for the payment of £45,000 as compensation to the managers and £5000 to the directors, leaving a balance which, it is stated, will enable shareholders to receive £4 for each £1 share. Labor conditions, government restrictions and the general uncertainty of shipping today has caused the directors to make this decision.

* * *

THERE is a small number of men idle in the Scottish shipyards. Although there has been a marked falling off in activity so far as the construction of cargo vessels, trawlers and other fishing craft is concerned, the liner work will probably prevent much unemployment for the next year at least. The present unemployment is due not so much to lack of work as to scarcity of materials.

* * *

THE Moffatt Steamship Co. has been formed with a capital of £120,000 with the object of acquiring a fleet of steamers suitable for the near continental and coastwise trade and accessible at all ports where freight offers. The managers, Messrs. Moffatt & Nicholson, Ltd., were successful in securing two new steamships for delivery in July, each of 300-ton capacity. It is proposed to acquire immediately two more steamships of similar capacity. The trading profit of the four

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steamers are estimated by the directors at over £145,000 ($580,000) per annum. The chairman of the company, Robert Craigie, was formerly shipping manager at Newcastle and Grimsby for large shipping lines. The agents and managers of the company are well known in Grimsby local coal exporting and shipping circles.

* * *

OTHER vessels launched in Great Britain recently include the twin-screw 8000-ton steamer MUNDRA, built for the British India Steam Navigation Co., Ltd., by Barclay, Curle & Co., Ltd., Scotstoun, Scotland, and the BOSWELL, 5200 tons, built by Harland & Wolff, Ltd., Belfast. The latter vessel was built to the order of Lamport & Holt, Ltd., Liverpool.

* * *

GREAT interest centers around the trial of the electrically welded ship FULLAGAR, which is now on her maiden voyage to the East. The engines use ordinary diesel engine-oil at £11 to £12 ($44 to $48) a ton consuming 42 pounds per brake horsepower including the consumption for the donkey boiler. The relatively light weight of this engine also is an important advantage, being said to be not more than half that of the usual type of reciprocating engine. This weight works out to about 218 pounds per brake horsepower. The hull of the FULLAGAR has been fabricated by electric welding without the employment of rivets.

* * *

THE steamship MONTCALM, a new Canadian Pacific passenger liner built by John Brown & Co., Clydebank, Scotland, has recently been launched. John Brown & Co. also have another vessel of the same type under way for the Canadian Pacific interests. The length of the MONTCALM is 563 feet with a gross tonnage of 16,200. Accommodation for 454 cabin passengers is provided. The propelling machinery consists of two sets of steam turbines of the Brown-Curtis type with double-reduction, helical gearing. The boilers are fired with oil.

* * *

FOR some time past, the steel trade on the northwest coast has been severely hampered by restriction in the supplies of low-phosphorus pig iron. In order to relieve this, the directors of the United Steel Co.'s, Ltd., are about to build a new dock at Workington, Cumberland. This will take boats up to 5000 tons and it is hoped to bring direct to the port additional supplies of iron ore from India and other countries. It is hoped that this will assist in preventing the smelters being entirely at the mercy of the Cumberland miners. A number of furnaces in that district could be put in blast if there were reasonable assurance of supplies of raw material.

Why Ship Securities Are Favored

ADVANTAGES of marine securities are becoming understood by the investing public as evidenced by the heavy gain in authorized capitalization of new shipping firms this year. Bankers in many cases are meeting this interest by disseminating information on such securities. Peabody, Houghteling & Co., Chicago, recently distributed the following discussion on steamship securities:

"Bonds or notes, secured by first mortgage on one or more oceangoing steamships, have for many decades been a standard investment in the east, and of late years have become much better known among bond buyers in other parts of the country. They assuredly need no apology, for when properly safeguarded, few types of securities have more attractive features; but for the benefit of those who have never considered them seriously as a desirable investment, some words of explanation and comment may not be amiss.

"In the first place, the mortgage given to secure notes or bonds of this kind is very simple, and contains clear and definite provisions for insurance protection, for the repayment of the loan and for the enforcement of the lien. Foreclosure is an extremely direct and effective process in maritime law, resulting in seizure and sale, without prolonged legal formalities, of the mortgaged vessel. The very nature of the shipping business has led to promptness and clarity in matters of this kind, for a ship's earnings bear a very close and direct relation to the actual time it is in active commission, and an idle ship is of no advantage either to owner or mortgage creditor. Instances of seizure for mortgage debt, however, are so rare as to be of little interest to the investor in well secured steamship bonds. No industrial security shows a finer record than the first mortgage bonds on modern steel freight vessels.

"One reason, perhaps, for the remarkable record made by bonds of this type lies in the comparative ease with which the value of the security can be ascertained. Most steamship bonds have an equity of about 100 per cent of the amount of the issue. Almost any bond would be safe with such a margin, if such a margin actually existed; but whether it does or not is sometimes hard to tell. In many types of investments there enters into the security feature an element of uncertainty in the form of estimated values. A ship, on the contrary, is a specific object the cost of which is definite and known; and if half that cost has been met in cash by the owners and half by the lenders, the investor gets a cash value equity which is both large and certain. Whatever further value the ship may acquire through freight contracts, charter or otherwise, is just that much more added to a security already ample.

"The variety of business to which a well designed ship may be turned is another point which adds materially to the safety of steamship securities. Most business activities must continue, through good times and bad, within their own local and well defined lines. A steamship, though normally employed in some particular trade, or on some particular run, may, as opportunity arises, be taken off her customary trade if other and more profitable cargoes are available. It is safe to say that with the world shortage of shipping still to be made up, and with a shortage of many lines of commodities in nearly every country on the globe, it will be many years before an economically operated freighter will have any difficulty in finding plenty of business on very profitable terms.

"By way of indicating the favor with which 'single boat bonds,' that is, bonds secured by mortgage on a specific ship, are regarded, we call attention to the fact that they are, under proper restrictions, a legal investment for savings banks under the laws of the state of Michigan. Among other provisions, the law requires that at least 10 per cent of the total issue of bonds shall be retired annually, beginning within two years of the date of the bonds, and that the mortgage liability shall not exceed one-half of the actual cost. The Michigan law refers to steamships operating on the Great Lakes, the securities of which, like those of oceangoing freighters, have an enviable record for prompt payment of principal and interest."

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Marine Business Statistics Condensed

New York Traffic

Steamship traffic entering and clearing the port of New York showed an increase of approximately 10 per cent during September over the month previous. About one-fifth of the ships entering came in without cargo, while approximately one-fourth brought bulk cargoes, the remaining bringing general cargoes. The number of ships clearing during the month of September was smaller than during the month previous, although the September total of net tons clearing showed a substantial increase. This was due to the fact that the regular passenger liners are getting down to normal again and are improving their turnaround in the port. The average total net tonnage entering so far this year has been in excess of the average net tonnage clearing. In this regard, the September traffic showed no difference. The clearances during the month were, however, more nearly equal the entrances than for some of the previous months.

NEW YORK PORT TRAFFIC 1920
(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
January	372	1,143,126	410	1,450,778
February	377	1,174,913	329	1,054,269
March	440	1,322,013	410	1,369,829
April	431	1,302,177	386	1,243,000
May	444	1,343,052	390	1,258,996
June	508	1,545,144	436	1,364,297
July	510	1,627,721	462	1,518,406
August	537	1,634,719	499	1,649,416
September	506	1,728,266	493	1,723,947

The improvement, while but small, was undoubtedly due to the comparative improvement in the bunker situation. Bunker prices softened during the month but showed a firmness again around Oct. 1. During the first week in October bunker fuel oil, 16 Baumé, was quoted at 8.5 cents a gallon, alongside, and diesel oil, 35 gravity, was quoted at 15 cents. On the other hand a good grade of bunker coal was quoted around $16 a ton, alongside.

Philadelphia Traffic

Less than one-sixth of the American overseas tonnage entering the port of Philadelphia during September entered in ballast, but over one-third cleared in ballast. On the other hand two-thirds of the foreign flag ships entered in ballast, whereas practically all cleared with cargo. Considering the entrances and clearances for the month as a total, the American and the foreign flag ships broke about even with the business available. The interesting feature of the month's developments, however, was the fact that American ships entered with the bulk of the cargo whereas foreign ships carried the exports. This situation arose from the fact that foreigners have been rushing their tonnage to Philadelphia to obtain coal cargoes. Some traffic authorities are inclined to the belief that the promised tariff discrimination on goods imported in American bottoms had some effect on the inward movement, but this was scouted by other practical steamship men. It was intimated, however, that while the foreign lines have given no cause for suspicion that rebates are being given, these foreign lines nevertheless are working in close harmony at the port of Philadelphia and that makes their efforts at obtaining outward cargoes the more efficient.

PHILADELPHIA PORT TRAFFIC 1920
(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
January	59	139,941	67	199,396
February	67	184,753	72	230,766
March	91	223,082	65	171,724
April	88	205,694	89	237,730
May	129	316,246	126	315,997
June	106	251,070	75	181,975
July	92	226,935	86	253,357
*August	134	336,802	145	404,867
September	140	376,182	150	460,804

*Corrected

Some slight betterment was reported in the bunker situation. Fuel oil was quoted at $2.10 a barrel, minimum, but some ships paid as high as 12 cents a gallon. Coal has been costing anywhere from $8 to $18 a ton, the lower price prevailing upon outstanding bunker contracts. Spot coal was quoted Oct. 1 at $15 on the pier or $16.15 a ton alongside.

New Shipping Firms

Indicated investment in shipping and shipbuilding during September was $6,720,000, the smallest monthly total so far this year. Returns compiled by the *Journal of Commerce*, New York, show that nine companies were organized during September against 20 in August and 18 in July. During the first nine months of this year the indicated marine investment totals $525,923,000. The September record follows:

Auditore Steamship Line, Inc., Del.	$1,000,000
American Black Sea Steamship Corp., Del.	50,000
Cascade Steamship Co., Del.	125,000
Calvert Navigation Co., Del.	1,000,000
General American Line, Inc., Del.	4,000,000
Keans Transportation Co., Mass.	150,000
Marine Transportation Co., N. J.	250,000
Westmount Steamship Co., Del.	145,000
Total	$6,720,000

Boston Traffic

Entrances and clearances of vessels engaged in the foreign trade at the port of Boston during July were as follows:

VESSELS ENTERING AND LEAVING BOSTON PORT DURING 1920
(Offshore Trade Only)

Foreign Registry

Months	—ENTERED— No. Ships	Net Tonnage	—CLEARED— No. Ships	Net Tonnage
January	26	66,829	17	54,203
February	23	68,344	8	19,227
March	24	86,755	15	39,079
April	38	111,719	21	43,726
May	31	60,204	28	34,472
June	58	109,204	44	49,906
July	62	113,337	56	53,820
August	85	122,019	59	55,394
September	64	107,212	52	49,801

American Registry

Months	—ENTERED— No. Ships	Net Tonnage	—CLEARED— No. Ships	Net Tonnage
January	27	74,297	23	49,203
February	23	55,878	16	36,296
March	36	84,031	21	48,438
April	46	68,777	47	74,498
May	54	64,466	53	52,964
June	62	88,932	44	74,688
July	49	99,617	31	70,879
August	48	113,687	24	69,249
September	35	103,284	23	73,244

September Ore Shipments

Shipments of iron ore showed a decrease during September, the total moved being 8,923,482 tons, which is a loss of 347,281 tons over the amount moved in August. In comparing the figures with those of September, 1919, when the movement totaled 8,178,483 tons, an increase of 744,999 tons is shown. Total shipments to Oct. 1 are 44,273,356 tons.

Detailed shipments by ports are:

Port	Sept. 1920	To Oct. 1 1920
Escanaba	1,088,806	5,483,644
Marquette	493,311	2,634,602
Ashland	1,253,633	6,187,035
Superior	2,330,512	11,291,936
Duluth	2,304,726	11,656,866
Two Harbors	1,452,494	7,019,273
Total	8,923,482	44,273,356
1920 increase	744,999	6,496,825

Lake Erie Receipts

Out of a total of 8,923,482 tons shipped from upper lake ports in September, Lake Erie ports received 7,617,417 tons as shown by figures compiled by THE MARINE REVIEW. The balance on dock Oct. 1 was 9,203,206 tons against 8,203,427 tons on Oct. 1, 1919. Detailed figures are:

Port	Gross tons
Buffalo and Port Colborne	1,330,848
Erie	335,254
Conneaut	1,155,772
Ashtabula	1,988,366
Fairport	211,912
Cleveland	1,222,456
Lorain	623,550
Huron	210,107
Toledo	388,338
Detroit	150,814
Total	7,617,417

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Marine Business Statistics Condensed

Ship Launchings

The past month was a busy one with the shipyards, as is evidenced by the number of boats upon which construction work was finished and the boats dropped into the water for outfitting and preparing for trials. The work of finishing some of these has been rushed, so many now are nearing completion. Among those which took the water in September were:

EL ESTERO: Tonnage, 8000 deadweight; 352 feet over all; builder, Downey Shipbuilding Corp., New York; owner, South Pacific Co., Atlantic Steamship lines, New York.

VEEDOL: Tonnage, 1800 deadweight; tanker; owner, Tidewater Oil Co., New York; builder, Staten Island Shipbuilding Co., New York.

BUFFALO SOCONY: Tonnage, 800; barge; 156 feet over all; owner, Standard Oil Co. of New York; builder, Bethlehem Shipbuilding Corp., Elizabeth, N. J.

WILLIAM PENN: Tonnage, 12,500 deadweight; owner, United States shipping board; builder, Pusey & Jones Co., Gloucester, N. J.

JOHN STEVENS: Tonnage, 9000 deadweight; owner, United States shipping board; builder, Merchant Shipbuilding Corp., Harriman, Pa.

KELOSKE: Tonnage, 7500 deadweight; tanker; owner, United States shipping board; builder, Bethlehem Shipbuilding Corp., Wilmington, Del.

ELISHA WALKER: Tanker; owner, Pan-American Petroleum Co., New York; builder, Sun Shipbuilding Co., Chester, Pa.

CLEMENT C. SMITH: Tonnage, 10,300 deadweight; tanker; 480 feet overall, 50 feet beam, 33 feet 3 inches depth; builder, Baltimore Dry Docks & Ship Building Co., Baltimore.

GRIFFDU: Tonnage, 2250 gross; owner, James Griffith & Sons, Seattle; builder, J. F. Duthie & Co., Seattle.

DONNA LANE: Tonnage, 3200 deadweight; owner, Price Co., Seattle; builder, Price Co., Seattle.

JAMES C. HAMLEY: Four-mast schooner; owner, Rogers & Webb Co., Boston; builder, Cumberland Shipbuilding Co., South Portland, Me.

PACHET: Tonnage, 8800 deadweight; owner, United States shipping board; builder, Atlantic Corp., Portsmouth, N. H.

CHINA ARROW: Tanker; tonnage, 12,600 deadweight; owner, Standard Transportation Co., New York; builder, Bethlehem Shipbuilding Corp., Quincy, Mass.

SULANERCO: Tonnage, 5350 deadweight; owner and builder, Submarine Boat Corp., Newark, N. J.

SUSCOLANCO: Tonnage, 5350 deadweight; owner and builder, Submarine Boat Corp., Newark, N. J.

LILMAE: Tonnage, 7500 deadweight; tanker; owner, U. S. Mexican Oil Co., New York; builder, Terry Shipbuilding Co., Savannah, Ga.

Soo Canal Report

During September, the total number of vessels locked through the Soo canal was 2674. They registered 8,469,143 net tons and carried 11,748,131 tons of freight. Compared with the movement for August, when 12,425,290 tons were handled, the figures show a decrease of 677,159 tons.

Of the total freight carried in September, 11,383,150 tons were handled by the United States canal while 364,981 tons passed through the Canadian lock at the canal.

The tonnage figures for the past seven years are compared as follows:

	Net Tons
September, 1920	11,748,131
September, 1919	10,202,917
September, 1918	12,400,073
September, 1917	13,544,686
September, 1916	12,906,524
September, 1915	10,979,451
September, 1914	8,417,716

The following tabulation gives the season's record for 1920 and 1919:

	To Oct.1 1920	To Oct. 1 1919
EASTBOUND		
Lumber, M. feet B. M.	157,646	185,818
Flour barrels	4,571,912	4,710,694
Wheat, bushels	50,724,199	66,287,216
Grain, bushels	29,542,026	35,544,656
Copper, net tons	34,185	40,176
Iron ore, net tons	42,295,119	37,385,615
Pig iron, net tons	212	3,608
Stone, net tons	45,162	44,262
Gen'l merch., net tons	37,447	49,452
Passengers, number	33,063	27,943
WESTBOUND		
Coal, soft, net tons	7,417,138	9,306,210
Coal, hard, net tons	1,301,983	1,379,206
Iron ore, net tons	99,403	71,863
Mfg. iron and steel, net tons	53,584	99,730
Salt, net tons	75,285	71,982
Oil, net tons	268,285	281,235
Stone, net tons	367,491	199,911
Gen'l merch., net tons	363,822	321,130
Passengers, number	34,010	28,229
SUMMARY		
Vessel passages, number	13,681	13,877
Registered tonnage, net	41,787,770	39,189,697
Freight		
Eastbound, net tons	45,410,347	41,155,878
Westbound, net tons	9,946,991	11,731,307
Total freight, net tons	55,357,338	53,187,935

Panama's 6-Year Record

The Panama canal completed six years of operation at the close of business on Aug. 14, 1920, having been opened to commerce on Aug. 15, 1914. During the six years, the total number of commercial ships making the transit was 10,573. Their aggregate net tonnage, according to the rules of measurement of the Panama canal, was 34,540,266. The cargo they carried totaled 40,313,629 tons of 2240 pounds.

The traffic was made up of 4934 ships, of 16,145,434 net tons, carrying 16,576,778 tons of cargo from the Atlantic to the Pacific, and 5639 ships of 18,394,832 net tons, with 23,736,851 tons of cargo from Pacific to Atlantic.

The canal was opened shortly after the beginning of the war in Europe. This and the interruption of traffic due to slides, the last serious one of which came to an end April 15, 1916, interfered with the normal use of the canal in its earlier years, and government requisitioning, high freights, scarcity of tonnage, financial and industrial uncertainties, and fueling difficulties have since the signing of the armistice delayed the establishment of what may be considered the conditions of unrestricted commerce.

A distinct and healthy growth of the traffic is, however, discernible, especially in the calendar year 1919, and the fiscal year 1920. Each of these, in ships and net tonnage, exceeded all previous years; and the fact that the traffic in the month and a half of the current fiscal year, beginning July 1, 1920, has been at a rate greater than that of any of the preceding years, indicates a continuing upward trend.

Ship Deliveries

Many boats have been added during the past month to the American merchant marine engaged in the deep sea trades and are ready to load cargoes for their maiden trips. A majority of the boats were, of course, for the shipping board, though several were built for private interests. The additions were:

PANHANDLE STATE: 522 feet x 62 feet x 42 feet; tonnage, 12,000 deadweight; built by New York Shipbuilding Corp., Camden, N. J.; owner, United States shipping board.

Dispatch boat: Tonnage, 2800 deadweight; built by Pusey & Jones Co., Gloucester, N. J.; owner, Eastern Steamship Lines, Inc.

GLADYSBE: Tonnage, 7500 gross; tanker; built by Terry Shipbuilding Corp., Savannah, Ga.; owner, U. S. Mexican Oil Co., New York.

ALGIC: 401 feet x 54 feet x 32 feet 10½ inches; tonnage, 5976 gross, 3700 net; builder, Merchant Shipbuilding Corp., Chester, Pa.; owner, United States shipping board.

CARRABULLE: 390 feet x 54 feet x 32 feet; tonnage, 5543 gross, 3407 net, 7825 deadweight; builder, American International Shipbuilding Corp., Hog Island, Pa.; owner, United States shipping board.

CASTANA: 390 feet x 54 feet x 32 feet; tonnage, 5543 gross, 3407 net, 7825 deadweight; builder, American International Shipbuilding Corp., Hog Island, Pa.; owner, United States shipping board.

TOMALVA: 390 feet x 54 feet x 32 feet; tonnage, 5543 gross, 3407 net, 7825 deadweight; builder, American International Shipbuilding Corp., Hog Island, Pa.; owner, United States shipping board.

CITY OF WEATHERFORD: 400 feet 7 inches x 54 feet x 32 feet 10 inches; tonnage, 5401 gross, 3364 net, 9000 deadweight; builder, Pensacola Shipbuilding Co., Pensacola, Fla.; owner, United States Shipping board.

HALF MOON: 401 feet x 54 feet x 32 feet 10 inches; tonnage, 5673 gross, 3484 net, 9000 deadweight; builder, Newburgh Shipyards, Inc., Newburgh, N. Y.; owner, United States shipping board.

ANAHUAC: 180 feet x 31 feet x 17 feet; tonnage, 863 gross, 461 net, 1193 deadweight; builder, N. Y. Harbor Drydock Co., New York; owner, Mexican government.

STEEL EXPORTER: 425 feet x 56 feet x 30 feet; tonnage, 5686 gross, 3450 net, 9380 deadweight; builder, Federal Shipbuilding Co., Kearny, N. J.; owner, United States Steel Products Co.

SURAILCO: 324 feet x 46 feet x 28 feet 6 inches; tonnage, 3545 gross, 2174 net, 5350 deadweight; builder, Submarine Boat Corp., Newark, N. J.; owner, Submarine Boat Corp.

Lake Michigan Receipts

Receipts of ore at Lake Michigan ports for September were 1,290,554 gross tons, as shown in the following record by ports:

Port	Gross tons
South Chicago, Ill.	768,274
East Jordan, Mich.	.....
Boyne City, Mich.	2,020
Milwaukee	39,096
Indiana Harbor, Ind.	168,048
Gary, Ind.	313,116
Total	1,290,554

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Marine Business Statistics Condensed

Seattle Traffic

The record of traffic at the port of Seattle and in the Washington customs district, including months for which figures are now available, follows:

FOREIGN IMPORTS, EXPORTS AND TONNAGE
Passing Through Washington Customs District

1920	Imports	Exports	Total	Entered, Tons	Cleared, Tons	Total, Tons
January	$20,964,055	$15,883,758	$45,847,813	242,653	280,827	523,480
February	40,708,726	15,989,197	56,697,923	276,702	266,873	543,575
March	46,392,720	32,780,040	79,172,760	302,678	282,694	585,372
April	32,713,226	25,156,134	57,869,360	280,959	243,328	524 287
May	38,291,480	12,299,371	50,598,851	291,641	289,354	580,995
June	28,549,857	18,392,975	46,942,832	297,591	268,389	465,980
July	20,886,360	16,057,896	36,944,256	276,721	316,101	592,922

SEATTLE PORT TRAFFIC 1920

Deep Sea Arrivals No. Ships	Net tonnage	Month	Deep Sea Departures No. Ships	Net tonnage
220	284,587	January	237	320,212
220	302,158	February	236	306,467
240	341,705	March	299	325,164
328	331,921	April	348	334,540
376	328,594	May	392	324,932
353	332,666	June	433	346,849
417	441,626	July	461	444,607
438	371,148	August	393	368,327

WASHINGTON CUSTOMS DISTRICT

	—Entrances— No.	Tonnage	—Clearances— No.	Tonnage
Jan.—American ..	61	87,385	196	128,962
Foreign	185	155,268	187	151,865
	346	242,653	383	280,827
Feb.—American	147	88,528	173	98,347
Foreign	183	188,174	176	168,526
	330	276,702	349	266,873
Mar.—American	185	118,794	174	107,134
Foreign	161	183,884	155	175,560
	346	302,678	329	282,694
Apr.—American	177	127,786	174	91,676
Foreign	183	188,174	176	168,526
	350	280,959	342	243,328
May—American	228	107,183	272	107,444
Foreign	188	184,458	194	181,910
	416	291,641	466	289,354
June—American	264	135,420	238	93,617
Foreign	190	162,171	194	174,772
	454	297,591	432	268,389
July—American	272	105,814	304	122,723
Foreign	220	170,907	219	193,378
	492	276,721	523	316,101

New Ship Construction

Close to half a million tons of ships have been authorized by the United States shipping board under section 23 of the Jones merchant marine act of 1920. This law authorizes exemption to ship operators from payment of excess profits taxes for a period of 10 years, provided a sum equal to the tax is set aside annually toward the building of new ships.

The following applications for construction of tonnage under the provisions of the act have been made:

Boston Maritime Corp., Boston, and Richard Diebold, Newcastle, Me.; one 5-mast schooner, to be constructed by the Newcastle Shipbuilding Co.

Standard Transportation Co., 26 Broadway, New York; ten oil tank steamers as follows: Four vessels, 12,620 deadweight tons, Bethlehem Shipbuilding Co., Quincy Mass.; four vessels, 12,620 deadweight tons, New York Shipbuilding Corp., Camden, N. J.; one vessel, 10,100 deadweight tons, Bethlehem Shipbuilding Corp., Sparrows Point, Md.; one vessel, 10,100 deadweight tons, Bethlehem Shipbuilding Co., Union plant, San Francisco.

Pacific Mail Steamship Co., New York; one 9800 deadweight ton oil tanker, to be constructed by New York Shipbuilding Corp.

Sun Co., Philadelphia; one 12,800 deadweight tons single screw bulk oil steamer, to be constructed by the Sun Shipbuilding Co., Chester, Pa.

Crowell & Thurlow Steamship Co., Boston; two cargo steamers of about 4400 deadweight tons to be constructed by the Bath Iron Works, Ltd., Bath, Me.

W. R. Grace & Co., New York City; one 10,000 deadweight tons oil tank steamer to be constructed by the New York Shipbuilding Corp.

Standard Oil Co. of New Jersey, 14 oil tank steamers as follows: Three vessels, 15,100 deadweight tons, Federal Shipbuilding Co., Kearny, N. J.; three vessels, 10,100 deadweight tons, Moore Shipbuilding Co., Oakland, Cal.; two vessels, 10,440 deadweight tons, Sun Shipbuilding Co., Chester, Pa.; two vessels, 20,300 deadweight tons, Newport News Shipbuilding & Dry Dock Co., Newport News, Va.; three vessels, 11,740 deadweight tons, G. M. Standifer Construction Corp., Vancouver, Wash.; one vessel, 11,900 deadweight tons, Oscar Daniels Co., Tampa, Fla.

Vacuum Oil Co., New York; one 10,000 deadweight tons single screw steel oil tank steamer, to be constructed by the Moore Shipbuilding Co., Oakland, Cal.

Officials and employes of the J. H. W. Steele Co., were entertained with a banquet in the Grunewald hotel, New Orleans, in August. Speakers were Neal M. Leach, vice president; J. P. Cribbin, local manager, and Capt. A. D. Shaw, port captain.

Panama Canal Traffic

Whole cargoes handled through the Panama canal during August, with summaries for earlier months of the year, follow:

ATLANTIC TO PACIFIC

	No. of cargoes	Tons
Fuel oil	14	114,402
Coal	9	36,889
Case oil	7	54,737
Steel and iron	2	15,000
Coke	2	5,291
Bones	2	4,733
Creosote	1	8,600
Machinery	1	8,221
Fuel briquettes	1	2,933
Mixed and general	83	289,148
Total	122	539,954

PACIFIC TO ATLANTIC

	No. of cargoes	Tons
Nitrate	30	148,338
Wheat	5	37,695
Flour	5	30,897
Cold storage food products	5	30,293
Sugar	4	29,954
Chrome ore	2	15,706
Railroad ties	1	8,260
Coal	1	7,648
Lubricating oil	1	7,367
Crude oil	1	1,115
Mixed and general	51	183,483
Total	106	500,786

SUMMARY FOR AUGUST

Number of commercial vessels	266
Registered net tonnage of above	770,320
Vessels without cargo	38
Registered net tonnage of above	106,401
Total cargo	1,040,740

SUMMARY FOR JULY

Number of commercial vessels	225
Registered net tonnage of above	702,951
Total commercial cargo handled	886,814
Vessels without cargo	33
Registered net tonnage of vessels without cargo	102,653

SUMMARY FOR JUNE

Number of commercial vessels	201
Registered net tonnage of above	575,027
Total cargo handled (tons)	834,421
Vessels without cargo	20
Registered net tonnage of vessels without cargo	52,890

SUMMARY FOR MAY

Number of commercial vessels	224
Total cargo handled (tons)	974,919
Registered net tonnage of above	694,941
Vessels without cargo	25
Registered net tonnage of vessels without cargo	88,043

SUMMARY FOR APRIL

Number of commercial vessels	220
Registered net tonnage of above	672,169
Total cargo handled (tons)	855,563
Vessels without cargo	37

SUMMARY FOR MARCH

Number of commercial vessels	235
Registered net tonnage of above	676,270
Total cargo handled (tons)	894,516
Vessels without cargo	42

SUMMARY FOR FEBRUARY

Number of commercial vessels	208
Registered net tonnage of above	579,842
Total cargo handled (tons)	701,799
Vessels without cargo	33

SUMMARY FOR JANUARY

Number of commercial vessels	238
Registered net tonnage of above	632,154
Total commercial cargo handled	894,628
Vessels without cargo	45
Registered net tonnage of vessels without cargo	94,443

The Southern railway will rebuild its coal tipple, destroyed by fire, at New Orleans, according to announcement by J. H. W. Steele, executive general agent.

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Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties— A Record of Collisions, Wrecks, Fires and Losses

Name of Vessel	Date	Nature	Place	Damage Resulting
Abraham Lincoln	Sept. 8	Disabled	Gibraltar	Steerer trouble
Albert Soper	Sept. 25	Sank	Cape Canaveral	Total loss
Amazon	Sept. 22	Collision	Gulfport	Heavy
Antietam	Sept. 14	Grounded	Off Pembrose Bridge	Not stated
A. F. Coats	Sept. 14	Grounded	Point Wilson	Not stated
Admiral Wainwright	Sept. 14	Fire	Balboa	Not serious
Altai Maru	Oct. 1	Collision	Off Tompkinsville	None
Astoria	Sept. 24	Disabled	San Francisco	Engine trouble
Banaran	Sept. 28	Disabled	Fayal	Engine trouble
Bobolink	Sept. 27	Grounded	Plum Island	Slight
Bayhead	Sept. 17	Disabled	Halifax	Boiler trouble
Bradford	Sept. 18	Struck bank	Panama canal	Leaking
Burnside	Sept. 18	Disabled	Fayal	Engine trouble
Basaan	Sept. 9	Leaking	Off Cape Race	Serious
Bramell Point	Sept. 29	Collision	Listons Range	Damaged stem and sides
Baltic	Sept. 20	Collision	Detroit river	Damaged plates and frames
Baygola	Sept. 28	Collision	Off Bay Ridge	Damaged bow
Barge 120	Oct. 1	Leaking	Off Bridgeport	Beached
Barge 114	Oct. 1	Sank	Off Bridgeport	Total loss
B. Lyman Smith	Oct. 3	Struck bridge	Duluth	Slight
Calimeris	Sept. 27	Disabled	West Port	Engine trouble
Cushnoc	Sept. 17	Disabled	Malta	Mach. trouble
Caroline	Sept. 9	Grounded (Fire in bunkers	Bordeaux	Slight
City of Omaha	Sept. 9	Sank	Yokohama	Cargo damaged
Campello	Sept. 24	Disabled	Madeira	Engine trouble
Cap Nord	Sept. 26	Leaking	Bermuda	Not stated
Consort	Sept. 22	Disabled	Falmouth	Boiler and pump trouble
Cotati	Sept. 22	Disabled	Off Bermuda	Not stated
Conde Wifredo	Sept. 10	Disabled	Las Palmas	Shaft broken
Charles A. Ritcey	Sept. 15	Grounded	Rose Point	Sank
Covalt	Sept. 26	Disabled	Bordeaux	Engine trouble
Cabegon	Sept. 27	Grounded	Kaiser Wilhelm canal	Not stated
Cheyenne	Sept. 29	Collision	Listons Range	Not stated
Cumberland	Sept. 30	Heavy weather	Off Shinnecock Light	Disabled
Christopher	Sept. 16	Disabled	Soo	Engine trouble
Charles O. Jenkins	Sept. 22	Grounded	Ashtabula	Damaged plates and frames
Duneric	Sept. 21	Leaking	Azores	Not stated
Dewey	Sept. 9	Grounded	Graves Light	Hull damaged
Edgecombe	Sept. 21	Leaking pipes	Buenos Aires	Damaged cargo
Empire City	Sept. 7	Boiler explosion	Off Cleveland	Killed three men
Eastern Tempest	Sept. 21	Disabled	Off Paulsboro	Not stated
Ella A	Sept. 17	Heavy weather	Off Aldinga Bay	Lost rudder
Elias Issaias	Sept. 10	Abandoned	At sea	Not stated
Elinor	Sept. 10	Disabled	Barbados	Engine trouble
Epitacio Pessoa	Sept. 12	Fire	Rio Janeiro	Damaged cargo
Etan	Sept. 30	Fire	Galveston	Heavy
E. W. Pargny	Sept. 24	Disabled	Duluth	Air pump trouble
Ecola	Oct. 2	Disabled	Noumea	Engine trouble, leaking
Fort Bragg	Sept. 22	Disabled	San Francisco	Mach. trouble
Fred W Ayer	Sept. 22	Grounded	Ship Island	Total loss
Fylla	Sept. 10	Grounded	Dundrum Bay	Not stated
Fultala	Sept. 13	Struck pier	New York	Not stated
Fort Wright	Sept. 30	Heavy weather	Off Shinnecock Light	Broke towing hawser
Francis Widlar	Oct. 1	Disabled	Ashtabula	Damaged crankshaft
Gertrude A. Sommerville	Sept. 25	Heavy weather	At sea	Lost sails
Gabrielle Poizat	Sept. 23	Grounded	Elephant Island	Not stated
Hewitt	Sept. 21	Out of control	Off Philadelphia	Not stated
Hillsborough County	Sept. 8	Disabled	Vigo	Mach. trouble
Huminique	Sept. 13	Diabled	Off Scatary Island	Lost rudder, engine trouble
Homecliffe	Sept. 14	Struck quay	Nantes	Damaged bows and stem
Havfruen	Sept. 14	Collision	At sea	Heavy
Havilah	Sept. 12	Disabled	Fayal	Boiler trouble
Hockomock	Sept. 23	Leaking	Halifax	Not stated
H. H. Porter	Sept. 9	Disabled	Soo	Blew out high pressure cylinder head
Harry Coulby	Sept. 11	Struck bridge	Duluth	Not stated
Henry Steinbrenner	Sept. 15	Collision	St. Clair river	Damaged side
	Sept. 23	Grounded	Winters point	Not stated
H. H. Rogers	Sept. 15	Struck by lightning	Detour	Not stated
Hemlock	Sept. 19	Grounded	West Neebish channel	Damaged bow, wheel and shoe
Hawthorne	Sept. 30	Heavy weather	Boston	Grounded
Impoco	Sept. 8	Boiler trouble	Saya	Heavy
Ile de Ceylon	Sept. 27	Grounded	Fort Delaware	Not stated
Irishman	Sept. 27	Fire	Philadelphia	Not stated
Jiul	Sept. 25	Grounded	River Plata	Not stated
Jacques Cartier	Sept. 7	Grounded	Off Krautsand	Not stated
John B. Collins	Sept. 13	Sprang leak	Ellis Island	Beached
J. H. Winstead	Sept. 15	Struck obstacle	Montauk Point	Sank
J. J. Barlum	Oct. 1	Grounded	Erie harbor	Not stated
John Ericcson	Sept. 15	Collision	St. Clair river	Damaged plates
J. P. Morgan	Sept. 17	Struck by lightning	Whitefish Point	Damaged compasses
J. G. Butler	Sept. 28	Disabled	Lorain	Damaged shoe and rudder
Kershaw	Sept. 17	Fire	Baltimore	Sank
Kane	Oct. 1	Disabled	Riga	Engine trouble
K. I. Luckenbach	Oct. 1	Grounded	Off Rotterdam	Not stated
Lake Franconia	Sept. 19	Disabled	Galveston	Not stated
Luiza	Sept. 16	Disabled	Southport	Engine trouble
Lehigh	Sept. 21	Grounded	Off Philadelphia	Damaged steerer
Lough borough	Sept. 9	Collision	Off Lisbon	Leaking
Lake Frugality	Sept. 22	Grounded	Off Texel	Not stated
Lake Singara	Sept. 22	Disabled	San Juan	Mach. trouble
Lake Dymer	Sept. 21	Disabled	Dover	Mach. trouble
Lake Pearl	Sept. 22	Disabled	Jacksonville	Not stated
Lizzie M. Parsons	Sept. 13	Fire	Queenstown	Cargo damaged
Lackawanna	Sept. 10	Disabled	Tampa	Engine trouble
Louisiana	Sept. 29	Disabled	Queenstown	Steam pipe split
Lakonia	Sept. 29	Collision	River Mersey	Not stated
Maid of the Mist	Sept. 24	Grounded	Off Cape Henlopen	Total loss
Magaret Thomas	Sept. 27	Struck obstacle	Savannah	Damaged rudder
Mopang	Sept. 18	Disabled	St. Michaels	Boiler trouble, leaking
Maui	Sept. 14	Disabled	San Francisco	Engine trouble
Monitor	Sept. 7	Disabled	Sydney	Steerer trouble
Metegama	Sept. 12	Collision	Off Montreal	Grounded
Mindoro	Sept. 16	Grounded	Off Cape Willoughby	Not stated
Mar Caspio	Sept. 13	Grounded	Copenhagen	Bottom damaged
Marsala	Sept. 19	Grounded	St. Clair Flats	Not stated
North American	Sept. 18	Disabled	Halifax	Lost propeller
Norwich City	Sept. 21	Fire	At sea	Damaged cargo
Nile	Sept. 17	Disabled	Honolulu	Boiler trouble
Naiwa	Sept. 13	Grounded	Stranger Key	Leaking
Norman B. Ream	Oct. 1	Grounded	St Clair Flats	Not stated
New England	Sept. 29	Collision	At sea	Leaking
Oregon Pine	Sept. 9	Disabled	Melbourne	Steerer trouble
Pittsburgh	Sept. 9	Grounded	Off Libau	In danger
Pechelbronn	Sept. 14	Disabled	St. Michaels	Boiler trouble
Putnam	Sept. 13	Disabled	New York	Engine trouble
Percival Roberts, Jr.	Sept. 17	Grounded	Round Island	Not stated
Panoil	Oct. 3	Disabled	At sea	Not stated
Prince Rupert	Sept. 30	Struck rock	Swanson Bay	Sank
Pelican	Sept. 29	Struck ice	Off St. Johns	Damaged bows & stern, lost blades
Richland Star	Sept. 19	Struck building	Milwaukee	Slight
R. R. Paisley	Sept. 25	Grounded	Ballard's reef	Leaking
Siboney	Sept. 9	Grounded	Vigo harbor	Heavy
Salazar	Sept. 18	Disabled	Falmouth	Boiler trouble
San Remo	Sept. 20	Grounded	Macoris	Total loss
Susie Pearl	Sept. 17	Grounded	St. Martins Creek	Not stated
Susan A. Moran	Sept. 21	Disabled	New York	Engine trouble
Steel Voyager	Sept. 25	Disabled	Dover	Mach. trouble
	Sept. 30	Collision	Gravesend	Not stated
Sierck	Sept. 21	Leaking	Brest	Not stated
South Pole	Sept. 10	Fire	Rotterdam	Damaged cargo
Sinasta	Sept. 14	Disabled	Off Queenstown	Engine trouble
Seth M. Todd	Sept. 14	Fell off bank	Steep River	Total loss
S. B. Hunt	Sept. 12	Disabled	Galveston	Not stated
Spokane	Sept. 13	Disabled	Sydney	Lost rudder
Saga Johoc	Oct. 1	Collision	Off Tompkinsville	None
Speedwell	Oct. 2	Hurricane	Gulf Mexico	Missing
Twickenham	Sept. 20	Disabled	Pensacola	Mach. trouble
Theofano Siderides	Sept. 26	Disabled	Bermuda	Lost propeller
Thomas H. Pollard	Oct. 1	Foundered	Off Cape Henry	Total loss
Troy	Sept. 30	Heavy weather	Boston	Grounded
Three Marys	Sept. 29	Hurricane	Gulf of Mexico	Total loss
Unicoi	Sept. 18	Damaged pumps	At sea	Not stated
Valadia	Sept. 24	Propeller trouble	At sea	Leaking
Vincent	Sept. 14	Disabled	Plymouth	Turbine trouble
Vermillion	Sept. 15	Struck obstacle	Montauk Point	Sank
Wahkiakum	Sept. 16	Disabled	Southport	Engine trouble
William M. Mills	Sept. 20	Leaking	Savannah	Heavy
Waukesha	Sept. 7	Damaged turbine and fan	At sea	Not stated
West Coast	Sept. 24	Disabled	Las Palmas	Mach. trouble
William Mitchell	Sept. 22	Collision	Gulfport	Slight
Wisla	Sept. 10	Disabled	Halifax	Engine trouble
Wisley	Sept. 12	Collision	Off Montreal	Not stated
Westford	Sept. 14	Grounded	Off Hamburg	Not stated
Western Ally	Sept. 14	Collision	Tyne	Plating torn away
W. E. Fitzgerald	Sept. 20	Collision	Detroit river	Not serious
Zirkel	Sept. 29	Disabled	Rotterdam	Engine trouble

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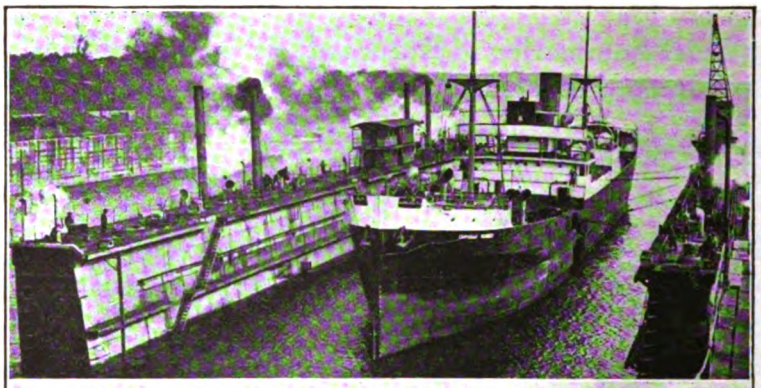
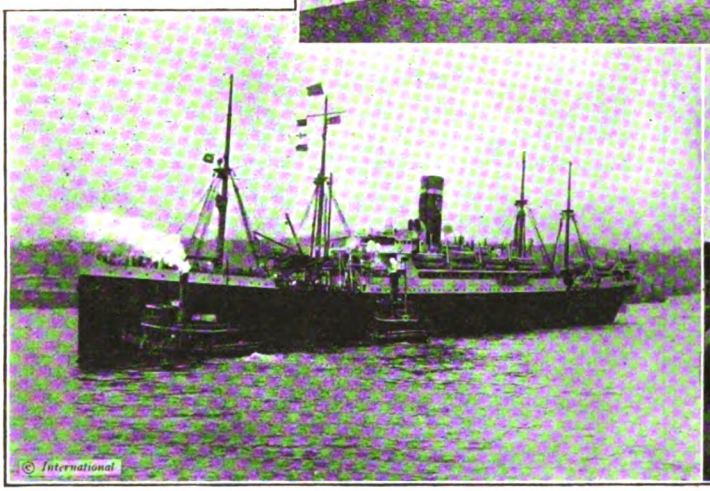
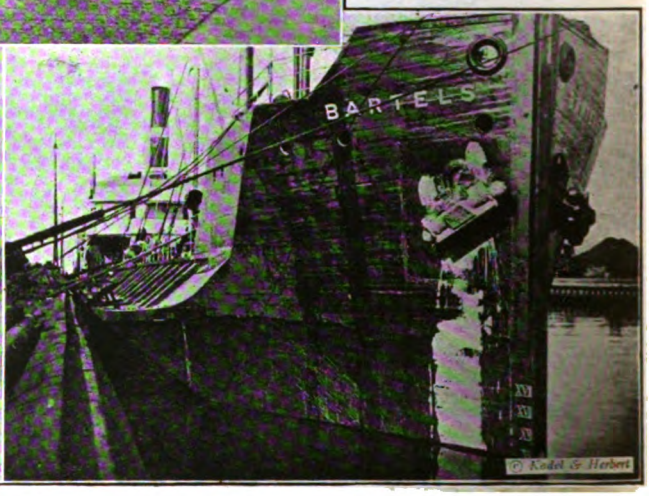
Latest Marine News in Pictures

"A triumph of marine engineering" we call it now, but when the Great Lakes shall be opened to ocean liners, the "triumphs" of the present day may appear as absurdities. Take for instance, the means by which this ship was sent to the Atlantic from Lake Erie—



Several vessels recently were built at Port Arthur, Ont., sent to Ashtabula, O., and there parted amidships in order that they might go through the locks of the St. Lawrence. The plan was carried out successfully, the illustration showing one of the ships being joined together in the floating drydock at Montreal

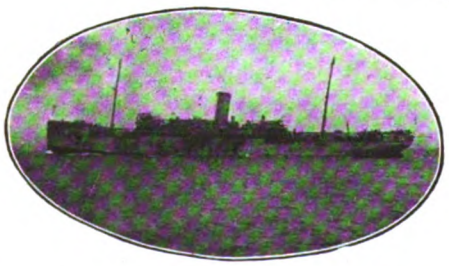




The American flag has been established over a new transatlantic passenger service. The Susquehanna, above, now running regularly between New York and Bremen, inaugurated the service

The first concrete ship just built by the Danes is of such peculiar shape that it appears almost as a monstrosity. Special reinforcements and bulkheads are said to have made it unsinkable

Seven cargo carriers launched in 87 minutes! That is the record held by the Hog Island yards which now are to be sold to the highest bidder



German troops came home from Turkey in this ship. German yards were five months in repairing her and then the reparations commission kept her anchored indefinitely in the Downs while deciding whether she should return to Turkey

The newest and largest Peninsular & Oriental liner to India and Australia is the Naldera, 15,825 tons. Her consort Narkunda is a little smaller and has a topgallant forecastle forward. The third funnel is a dummy, put in only for sake of appearances

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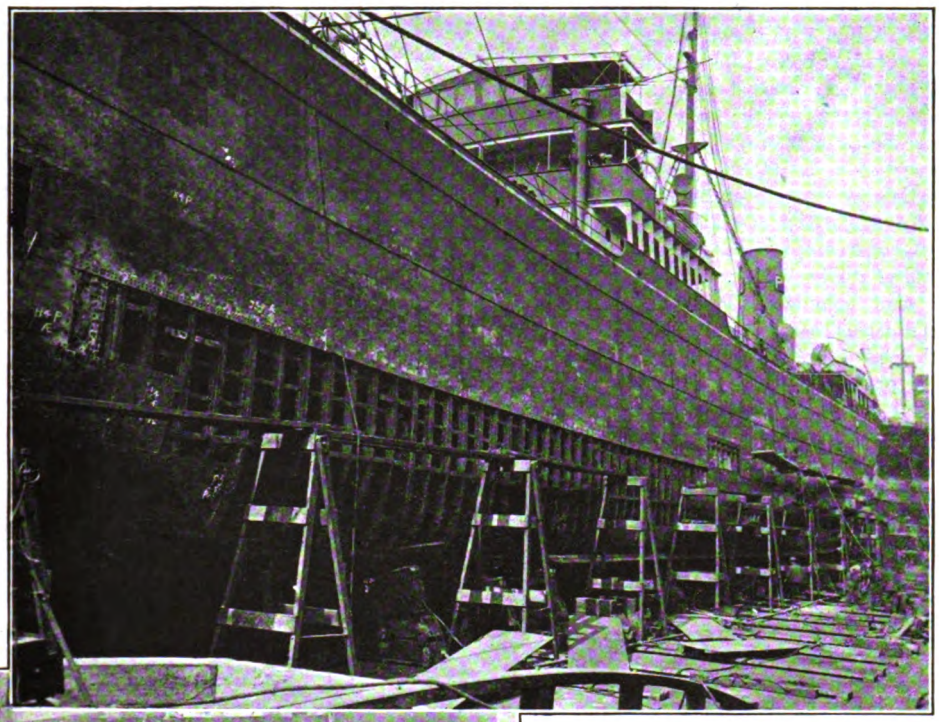
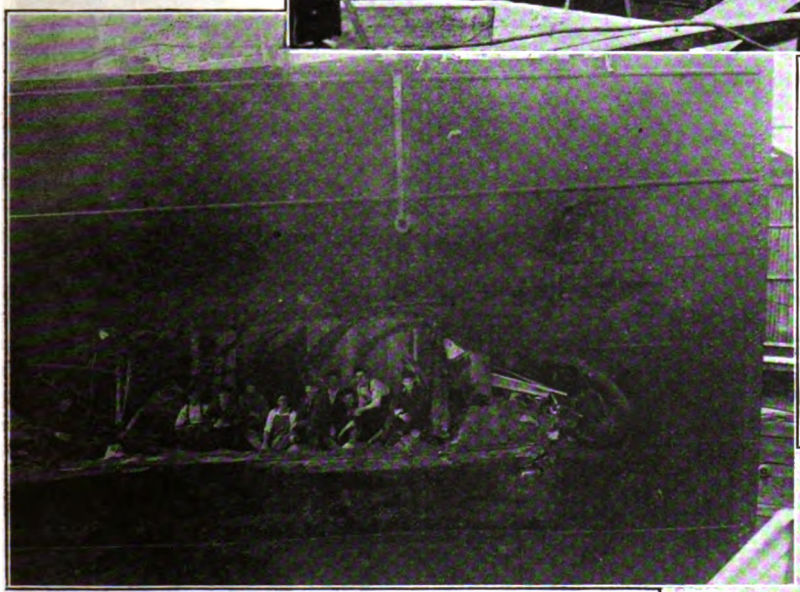
Photographs from Far and Near

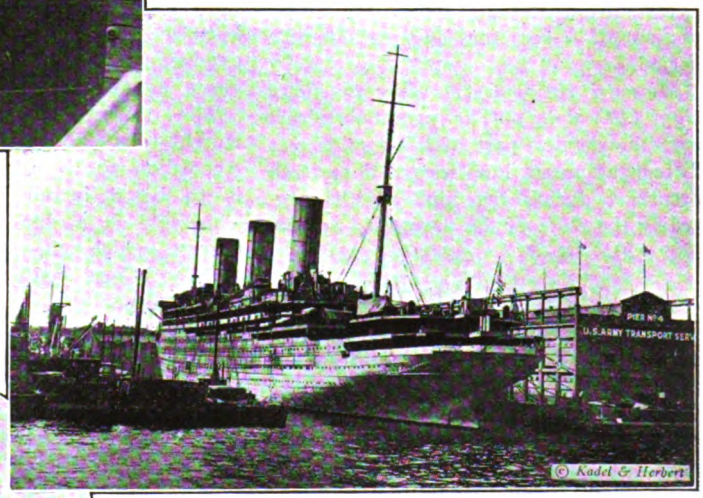


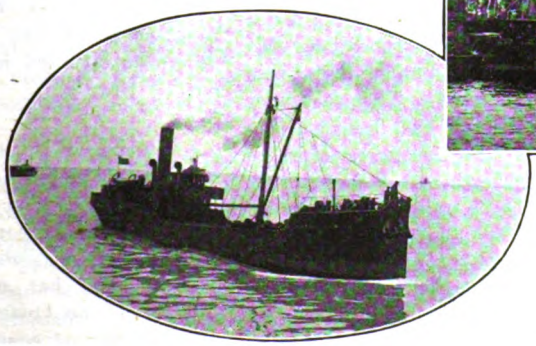
Motorship Tancarville from which tier after tier of iron plates were removed while the ship occupied the large dock of the Morse Drydock & Repair Co. She is one of the few iron ships still in service



Largest passenger liner in the world, the Leviathan, after an expensive year of idleness. She has been tied up at Hoboken since bringing home General Pershing. Her sale to American shipping companies has been delayed by injunction and by indecision on the part of the shipping board. In view of the estimated refitting cost of $8,000,000, bids are now proving difficult to obtain

A hole 25 feet in length was torn in the bow of the Tunisian, Canadian Pacific Ocean Services, recently in collision with a freighter in the St. Lawrence. No lives were lost. It was the only accident of the season on the St. Lawrence





The Pattersonian, a steel coasting steamer of the type being acquired by British manufacturers to cope with the traffic congestion on English railways. This vessel, 135 feet long and 23½ feet beam, 350 deadweight tons, is owned by a large foundry company at Newcastle. She plys between London and the Tyne. During the war she sank an enemy submarine

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Status of Work on Inland Waterways

Exact conditions of the inland waterways of the Mississippi valley, and along the Gulf of Mexico coast, in which great interest has been aroused because of the recent increase in the use of steamboats on these waterways in the South, are described in a statement supplied to New Orleans steamboat owners and shippers by Maj. Gen. Lansing H. Beach, chief of engineers, as follows:

Black Warrior river—Whole project about 99 per cent complete. It is reported as practicable to carry tows 50 feet wide and loaded to a 6-foot draft over the whole project.

Mississippi between the mouths of the Ohio and Missouri rivers—About 35 per cent completed. Between the mouth of the Ohio and St. Louis, the channel depth has been increased to 8 feet. Between St. Louis and the mouth of the Missouri river, the project depth of 6 feet has been maintained.

Mississippi from the mouth of the Missouri to Minneapolis—About 52 per cent completed. Maximum draft at extreme low water 4 feet on Rock Islands rapids, one of the critical points.

Mississippi from St. Paul to Minneapolis—This improvement has resulted in slack-water navigation to Washington avenue bridge, Minneapolis, with a minimum depth of 6 feet at low water, the project being now 99 per cent completed.

Missouri river, mouth to Kansas City (398 miles)—Systematic improvement of the 6-foot channel, about 34 per cent completed. A 6-foot depth prevails for about 135 miles. During the fiscal year there was not a dependable depth in excess of 4½ feet depth over this entire section of river for any considerable period.

Missouri river, Kansas City to Sioux City (409 miles)—The maximum draft over the shoalest part of this section was 3 feet at mean low water, this depth occurring during the four months preceding the close of the navigation season, Nov. 30.

Intracoastal Waterway

Mississippi river to Bayou Teche—At end of the fiscal year a channel of the required dimensions measuring 40,785 feet had been obtained.

Bayou Teche to Vermilion river—There is no channel open to the public. Proceedings for acquisition of Hanson canal are now in progress.

Vermilion river to Mermentau river—There has been obtained a depth of 5 feet and a width of 40 feet at the bottom. The controlling depth at mean low gulf on June 30, 1920, was 5 feet, available throughout the year. From Vermilion river to Schooner Bayou, La., no operations were in progress, pending acquisition of right of way.

Mermentau river to Calcasieu river—At the eastern end, 4000 feet of canal 5 by 40 feet have been constructed. The controlling depth at mean low gulf on June 30, 1920, was 3 feet on Lake Misere and Sweet Lake canals.

Calcasieu river to Sabine river—The canal over this section was dredged to 5 x 40 feet in 1915, and is in fair condition.

Sabine river to Galveston bay—There is no adopted project for this section.

Galveston bay to Brazos river—The project was completed in 1910. The ruling depth is about 4 feet at mean low tide.

Brazos river to Matagorda bay—The project for the main channel was completed in 1913. The ruling depth on June 30, 1920, was about 3 feet at mean low tide, the shoaling in this channel resulting from the numerous freshets in Brazos river.

Matagorda bay to Aransas Pass—The project was completed in 1909. Ruling depth about 5 feet.

Aransas Pass to the Rio Grande—There is no adopted project for this section.

Buys U. S. Built Tanker

Among the few ship sales reported in the market, none probably carried as much interest as that consummated by the New York Shipbuilding Corp. with the United Fruit Co. In this instance, the transportation company purchased from the shipyard a tanker which was laid down originally for builder's account. While the price paid was not announced, it is understood to have been a figure in excess of $200 a deadweight ton, or higher than previous quotations.

The tanker measures 9820 deadweight tons and will make 11½ knots. According to the contract of sale she is to be delivered by Feb. 1, 1921. This ship is a duplicate of the GULF QUEEN which the New York Shipbuilding Corp. built in 1915 for the Gulf Refining Co.

An interesting phase of the sale is the fact that although the United Fruit Co. is an American corporation, this is the first, large American-built ship it has ever purchased. The passenger fleet of this company has been built in British yards. Furthermore, this is one of the rare instances of a consumer of oil purchasing a tanker in order to assure itself of its own supply of fuel. The Southern Pacific Co. has for some time owned and operated its own tanker line, but it is the only consumer that made a practice until now of transporting its own fuel.

German Seamen Desert

During the recent passage of the German steamship LUCIE WOERMAN through the Panama canal on the way from Hamburg to Chile with some 688 seamen to man German sailing vessels to be returned to Europe under terms established by the reparations commission of the allies, a number of the seamen slipped overboard and swam ashore with the intention of deserting.

They began going overboard in the Gatun lake section, approximately opposite Frijoles, and continued through Gaillard cut. As soon as the matter was reported a police launch ran alongside the ship and prevented further desertions, while a call was sent out for the apprehension of all that came to land. Up to the time of the clearing of the LUCIE WOERMAN from Balboa, 61 had been returned aboard, and 5, taken later, are now held by the police.

The master of the vessel was unable to say how many had gone overboard or even to state exactly how many had shipped on the vessel, as he had found a number of stowaways and in the mutinous condition of the men had not been able to secure a check on their number.

The Windward Island Steamship line Mobile, Ala., is operating a fortnightly service between Mobile and Trinidad and other West Indian islands and British Guiana. The vessels in the service are the LAKE GILTEDGE, LAKE LIFE, LAKE FLAGSTAFF, LAKE STRYMON and LAKE FELDEN. Direct service to the United States is being given from the smaller West Indian islands which previously had difficulty in getting their products to market. Westbound traffic is in articles such as limes, nutmegs, cacao and copra. Southern pine is furnishing a large part of the eastbound movement.

When the Pacific Steamship Co. takes over its new passenger liners WENATCHEE and KEYSTONE STATE, it is planned to bring out two large parties of sightseers to the Pacific coast. E. G. McMicken, general passenger agent of the line, has gone to the Atlantic to make the preliminary arrangements. These vessels and others are to be operated in the Oriental route out of Seattle.

Another addition to the fleet of river steamboats, placed in service on southern waters following the increase in railroad rates, is reported from Ouachita river points in Louisiana. J. T. Lively, Monroe, La., has put a steamboat in service on the Ouachita, and the Monroe chamber of commerce is sponsoring a steamboat and barge line.

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Yards Get Many Ship Inquiries

Requests For Bids Chiefly Are From American Shipping Interests—Shortage of Passenger Steamers Pronounced

BY V. G. IDEN

AS SHIPBUILDING under construction declines to around the 2,000,000-ton mark, pessimism begins to display itself in some quarters. This is due to the fact that an incorrect measure of world shipbuilding is being taken. It has been prophesied by classification authorities that the normal construction in American yards is more likely to be around 1,000,000 tons of ships a year, and it is believed that the English yards will also be content to do an equal amount of work. Constructing 6,000,000 tons of ships in one year was the record set by the United States during the pressure of war. No one expected that record would be maintained.

Shipbuilding, however, reflects in a measure the condition of the freight market. During the past month, ocean freight rates have held rather firm although they seem to be at rock bottom. Bunker costs have been high and new shipping enterprises could see little hope even for a living wage in the present market. Added to this has been a slump in the volume of freights resulting from radical readjustments of international trade, fluctuations in foreign exchange and a worldwide tendency toward lower commodity prices. Shipping has reflected all these conditions, and the immediate result is that no new construction ventures have been launched.

Inquiries Are Numerous

This does not measure the future activities of American shipyards. There have been enough feelers in the market during the past month to keep up the hopes of the builders. At the moment, foreign buyers of ships are hesitating about placing orders because they are well advised of the change in conditions in England. England has been suffering a decline in the freight market, a cancellation of shipbuilding orders, labor troubles and reduced commodity prices. Until that situation becomes normal again, new building projects will be postponed by foreign shipping people. Nothwithstanding this "holding off" era, the American yards have been successful in capturing some business, and a large number of promising projects are now on the boards.

An order for the construction of two tankers for British interests has been taken by the George A. Fuller Co., Wilmington, N. C. These are to be steel tankers of about 9200 deadweight tons each and are to be delivered early next year. This makes contracts for eight tankers let in this country by the Anglo-Saxon Petroleum Co. It is reported further that the same British company now is negotiating for letting contracts for 10 more tankers of similar design.

The Baltimore Dry Docks & Ship Building Co. has drawn plans for the construction of two tankers, which will be erected for its own account. It is reported this company plans to go into the operating business, at least for the transportation of oil.

Finances Ship Purchases

Another announcement of importance during the past month was the new bond issue of the Bethlehem Steel Corp., which issue is to cover additions to the maritime enterprises of that corporation. Bethlehem has plans for building six more bulk carriers to add to its present fleet, operated by the Ore Steamship Co. These bulk carriers are used to bring iron ore from Cuba to Baltimore. One of the bulk carriers, however, will be built under an arrangement with the Standard Oil Co., whereby Bethlehem is to build one bulk carrier capable of transporting oil to Chile and bringing iron ore back upon condition that the Standard Oil Co. will build a sister ship for the same trade. The keels of these boats upon advanced designs are expected to be laid before the end of the year.

During the past month, however, the shipping board cancelled contracts with the Bethlehem company for three passenger boats, contracts for which were entered into during the war. These contracts were cancelled because the keels to the three vessels had not been laid and delivery of the vessels had, consequently, been greatly delayed. The vessels were originally designed for troop ships, but later their design was changed to combination boats.

Freight boats under construction in American yards have shown a monthly decline ever since last April. There was a decline in the tanker tonnage under construction in August. Much is expected, however, of this latter type of tonnage. According to naval architects there are about 400,000 tons of tankers for construction, contracts for which have not as yet been let, but for which operators are laying plans. It is anticipated, on the other hand, that not a great deal of this tonnage will be placed for construction before the first of the year. Politics, unsettled shipping conditions, and limited credits are obstacles which will cause the delay.

Passenger Tonnage Gains

Passengeer tonnage, it is expected, will forge to the front before many more months have passed. The New York Shipbuilding Corp., Camden, N. J., has laid the keel for the first of the Munson passengers. This ship was designed by Theodore Ferris and will measure about 400 feet between perpendiculars. It is expected to have the completed ship delivered by September, 1921. She will then be used in the South American and West Indies trades. It is not at all unlikely but that she also may be diverted into the overseas trade should the occasion arise. This vessel will have De Laval gears, and a turbine of advanced design built upon the Parsons plans. She will have the Dahl system of oil burning built by the Bethlehem Shipbuilding Co. Soon to follow will be the "intermediate" steamers to be built for the American line. There will likely be two of these ships, to measure approximately 20,000 tons deadweight. The plans have been drawn, but it is understood the company is not ready to let contracts.

The Admiral line on the Pacific coast is said to be contemplating coming to Atlantic coast builders for two new express passenger steamers for its coasting trade. These vessels will measure 560 feet in length and will be rather fast steamers. Contracts soon will be let. The Red D line will also let contracts shortly for two passenger ships, but these will measure but 385 feet between perpendiculars. They are intended for the service between New York and Venezuela and other north coast ports of South America. The Downey Shipbuilding Corp. has launched the EL ESTERO for the Southern Pacific Co., Atlantic Steamship lines of New York. She measures 352 feet in length overall and is designed especially for the coastwise trade. Two other sister ships are building. The Submarine Boat Corp.

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has launched the SULANIERCO and the SUSCOLANCO, the latter making the one hundred and thirty-eighth fabricated ship produced at this yard. The Standard Shipbuilding Corp., Shooters Island, New York, has delivered the NICARAO, the second of two special type passenger and fruit steamers constructed for the Cuyamel Fruit Co.

Launches Small Tankers

The Staten Island Shipbuilding Co., Staten Island, New York, has launched the VEEDOL, the 1800-ton oil tanker building for the Tidewater Oil Co. The Moore Plant of the Bethlehem Shipbuilding Corp., Elizabeth, N. J., has launched the BUFFALO SOCONY, the first of three steel oil barges to be built for the Standard Oil Co. for use on the New York State barge canal.

The twentieth and last ship which the Pusey & Jones Co. plant at Gloucester, N. J., was under contract to complete for the Emergency Fleet corporation, was launched last month. This is the WILLIAM PENN, measuring 12,500 tons. This same yard has delivered the fast dispatch freight boat built for the Eastern Steamship Lines, Inc., which was the last contract the yard had for private account. The dispatch boat measures 2800 tons on 21-foot draft.

The Merchant Shipbuilding Corp. has launched the 9000-ton steamer JOHN STEVENS for the Emergency Fleet corporation. Following the launching of this ship, the yard laid the keel of an Isherwood tanker, 10,000 tons deadweight, which is to be built for the Tidewater Oil Co. Two steamers of 10,000 tons, which the yard is building for the Shawmut Steamship Co., are being altered so that they may be used as third-class passenger ships in the transatlantic trade.

The Bethlehem Shipbuilding Corp. plant at Wilmington, Del., has launched the 7500-ton tanker KELOSKE, which is the last contract this yard has for the Emergency Fleet corporation.

Keels for two tankers to be built for the Standard Oil Transportation Co. of New York have been laid at the south yard of the New York Shipbuilding Corp. The keel for another tanker will shortly be laid. The George A. Fuller Co., Wilmington, N. C., completed its contract with the Emergency Fleet corporation with the delivery of the steel steamer SYROS. The Terry Shipbuilding Corp., Savannah, Ga., has delivered the steamer GLADYSBE and launched the LILMAE, the third and fourth of a series of five 7500-ton oil tankers for the U. S. Mexican Oil Co. of New York.

Plan Liner for Alaskan Service

THE Todd Dry Dock & Construction Co., Tacoma, Wash., has been awarded the contract for building an all steel motorship of 6500 tons deadweight for the Alaska Steamship Co., Seattle. This vessel is to be designed for carrying heavy bulk cargoes and lumber in various offshore routes. She is to be equipped with complete electrically driven auxiliary machinery. It is expected a speed of 11 knots will be developed by twin engines. Two McIntosh-Seymour diesel engines of the 4-cycle type, each having six cylinders and developing 1200 brake horsepower at 140 revolutions per minute will provide the motive power. Sectional bronze propellers will be installed. This is the first steel vessel with this type of power built at a Puget sound yard. Her lumber capacity will be about 3,250,000 feet.

The dimensions will be: Length over all, 360 feet; between perpendiculars, 345 feet; molded beam, 49 feet 6 inches; molded depth, 26 feet 9 inches; loaded draft, 22 feet. In the steel double-bottom, space will be provided for fuel storage. The tanks will give space for 1500 barrels and with 4500 barrels as cargo will be enough to propel the vessel at her estimated consumption a distance of 26,000 miles. The ship will be built on the Isherwood longitudinal system. No steam will be used aboard, the auxiliaries to be electrically driven by current from two auxiliary 100 horsepower McIntosh-Seymour engines. There will be four large cargo holds and three 'tween decks. Eight of the booms will have a lifting capacity of 10 tons and one of 30 tons. Housing space for officers and crew will be amidship.

The Alaska Steamship Co. has for years operated a large fleet of passenger and freight steamers principally to Alaska but frequently some of these vessels have been chartered for South American and other routes. The new motorship will be assigned to whatever trade is found available.

In addition to work on the usual fleet of small vessels requiring repairs and docking, the Seattle plant of Todd Dry Docks, Inc., is having a busy season. The steel steamer ELIHU THOMSON, recently sold to Peruvian interests, is being overhauled and altered preparatory to being delivered, the contract including conversion from a coal to oil burner. The shipping board freighters WHEATLAND MONTANA, WEST IVAN, MAQUAN and WESTWARD HO have been at this plant for docking and various machinery and hull repairs.

On Sept. 10 the 2250-ton steel steamer GRIFFDU was launched by J. F. Duthie & Co. Seattle, for James Griffiths & Sons. This craft is a sister vessel to the GRIFFCO launched in August. Both will be used in general freighting and towing in North Pacific waters. The GRIFFDU was christened by Mrs. Stanley A. Griffiths, wife of one of Captain Griffiths' sons, who are associated with him in his various maritime enterprises. The GRIFFDU contract concludes the construction work under way at the Duthie plant which during the war established a splendid record.

The motorship DONNA LANE has been launched by the Price yards, Seattle, completing the program of construction of wood ocean going vessels in that district. This boat, like her sister vessel MURIEL, now almost completed, is of 3200 tons deadweight with a lumber capacity of 1,700,000 feet. DONNA LANE is equipped with two McIntosh-Seymour diesel engines of 500 horsepower each. The fuel oil capacity is 2200 barrels, sufficient for 65 to 70 days. A speed of 10 knots is guaranteed. These vessels originally were ordered for the Hannevig interests. Owing to numerous difficulties the construction contracts were acquired by the Price company. Negotiations are under way for the sale of the two vessels.

Builds Miniature Tanker

A miniature wooden bulk oil carrier was recently launched at the Tregoning yards, Seattle, to the order of the Bering River Coal Co., Alaska. The little craft, christened MARGARET, is only 65 feet in length and cost $35,000. Her carrying capacity will be 12,000 gallons in addition to 1500 gallons in her fuel tanks. The MARGARET will be used in distributing the owner's output of its Katalla wells to Cordova and adjacent points. The little tanker is equipped for towing oil barges. Steel construction was first considered, but it was abandoned in favor of wood as the boat will operate along a dangerous shore and wood was deemed preferable.

Wooden shipbuilding at North Vancouver, B. C., has passed. The Lyall Shipbuilding Co., which built 24 wooden carriers in less than three years, has allowed its lease to lapse and has withdrawn from the building field.

Claim for $428,053 has been filed by the Astoria Marine Iron Works against the Emergency Fleet corporation. This action has been taken in an effort to effect a settlement of a contract with the government, which it is said included the building of a drydock at Astoria, Oreg. Construction work was

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begun last October, but the contract was later canceled, it is claimed. The action is for $275,000 damages in addition to money claimed expended for labor and materials.

British Place Contract Here

Unable to place a contract satisfactorily in British yards, the Canadian Pacific interests have placed an order with the Wallace shipyards, North Vancouver, B. C., for a large and fast coasting steel steamer, designed especially for the Alaska route. This vessel will replace the PRINCESS SOPHIA, which was lost in Alaskan waters two years ago. The new liner, however, will be larger and faster than the former boat and will cost three times as much. The contract price is said to be $1,500,000. In this connection, it is interesting to note that the PRINCESS CHARLOTTE, the finest and speediest of the Canadian Pacific railroad's coasting service was built on the Tyne in 1908 for $635,000. The new vessel will have a speed of 17 knots as against 20 for the CHARLOTTE. The liner will be 322 feet in length and will have accommodations for 260 saloon passengers and 150 in second class and crew. She will be operated on a weekly schedule between Vancouver and Skagway.

At the Cholberg yards, Victoria, B. C., three wooden barkentines are under construction. They are being built under subsidy arrangements with the Canadian government. The first carrier is expected to be ready for December loading.

The 8800 deadweight ton steel steamer CITY OF VANCOUVER has been launched at the Coughlan yards, Vancouver, B. C. This vessel was built to owners' account and will carry a cargo of railroad ties to Great Britain. This carrier is a sister vessel to the MARGARET COUGHLIN already in operation.

The first section of the 15,000-ton floating drydock being constructed for the public dock commission, Portland, Oreg., has been launched. Each pontoon is 85½ x 126¾ x 54 feet in height. The dock will be located adjacent to the dock of the Port of Portland and both will be operated under joint management of the two commissions.

The Louisiana plant of the Merrill-Stevens Shipbuilding Co., Jacksonville, Fla., located at Slidell, about 32 miles from New Orleans, will be reopened soon, according to S. Cuyler Jenkins and W. J. Payne, principal owners of the Louisiana branch.

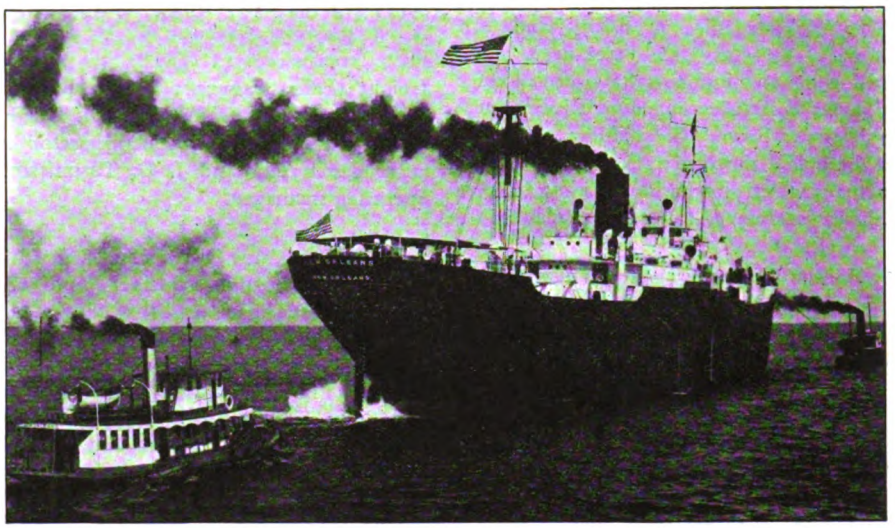
Keels for two tankers to be built for the Standard Transportation Co., New York have been laid at the South yard of the New York Shipbuilding Corp., Gloucester, N. J.

Take First Steamer to Gulf

The 9600-ton steel ocean going steamer NEW ORLEANS, built for the United States shipping board by the Doullut & Williams Shipbuilding Co., New Orleans, was taken out across Lake Pontchartrain, through the Rigolets and thence to Mississippi sound, in September. She is the first deep-sea steamship ever to navigate the waters of Lake Pontchartrain. The trip was made under the ship's own power, with 82 persons, including the crew, on board. Capt. M. P. Doullut, of the constructing company, handled the ship out across the lake.

Nearly four days were required to cover the 30 odd miles from the mouth of the inner harbor and navigation canal at New Orleans, where the NEW ORLEANS was built, owing to the lack of water in the lake, which at the deepest is only 17 feet. The ship grounded after passing through the drawbridge of the Louisville & Nashville railroad. Two tugs were unable to budge her, owing to lack of water, and three trains were held up for some time by the stern of the vessel projecting over the bridge. Falling tide in the lake, making the water still lower than normal, held the ship tied up all of the first night in Little Lake, about 30 miles from New Orleans. The NEW ORLEANS was taken a long and circuitous route around the gulf from Mississippi sound and thence 110 miles up the river to New Orleans for delivery to the shipping board at that port.

Other hulls now building at the Doullut & Williams yard, and at the yard of the Foundation Co., also on the new $20,000,000 canal, will be held in the canal, according to present plans, until the locks into the river are completed, and they can be taken direct into the river instead of dragged over the mudflats of Lake Pontchartrain. The locks probably will be finished late this year, or early in 1921.



FIRST BIG SHIP TO CROSS LAKE PONTCHARTRAIN

News of the Shipyards

The shipping board has authorized the sale to foreign purchasers and granted permission for transfer to foreign registry of 10 steel steamers of approximately 3700 deadweight tons each, constructed on the Great Lakes by the American Shipbuilding Co. The registries to which transfer of these vessels will be allowed are France, Norway, Sweden, Holland, Denmark, Belgium, Spain, Italy, Great Britain and its colonies and dependencies.

These vessels, equipped to burn either coal or oil, were constructed by the American Shipbuilding Co. for its own account. The shipbuilding company, it is said, will receive about $662,700 each for the vessels, which approximates $171 a deadweight ton.

The new Fore River drydock of the Bethlehem Shipbuilding Corp. is nearing completion. Practically all frames for the pontoon tanks have been completed, it is reported. Five of the bulkheads have been riveted.

Work has been begun on the first of two scout cruisers to be built at the Fore River, Mass., yard of the Bethlehem Shipbuilding Corp. The keel for the fighter was laid on Aug. 16. The mold loft is laying down the lines of the battle cruiser LEXINGTON. When completed it will be the largest and fastest ship of its class afloat.

A marine exposition will be held by the United States shipping board and the National Marine league, in New Orleans, at Mardi Gras time, in February, 1921.

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Marine News in a Personal Way

Intimate Gossip About What Leaders in the Maritime World Are Doing

JOHN A. UBSDELL has been elected president and general manager of the Great Lakes Engineering Works, Detroit. Antonio C. Pessano was elected chairman of the board of directors, which is composed of the following members beside Mr. Ubsdell and Mr. Pessano: George B. Turnbull, Frederick G. Morley, C. Henry Hecker, T. W. Palmer Livingstone and Joseph Boyer Jr., all of Detroit; Isaac W. Frank, Pittsburgh, and John T. Webster, Cleveland. Mr. Turnbull is vice president and assistant general manager; Mr. Webster, vice president, and Mr. Morley, secretary and treasurer. The following appointments have been made: Charles E. Baisley, manager River Rouge shipyard; Frank C. Pahlow, manager Ashtabula shipyard; Robert Jackson, manager Detroit Engine Works; Charles Short, secretary to the president.

* * *

HALVOR JACOBSEN, general manager of the Scandinavian-American line, and A. T. Henderson, general traffic manager of the French line, have been elected to the directorate of the National Life Preserver Co., New York.

* * *

J. L. ACKERSON, former head of the Emergency Fleet corporation, has accepted a position with the Merchant Shipbuilding Corp., as manager of its Chester, Pa., plant. Since leaving the fleet corporation, Mr. Ackerson has been with the Winchester Arms Co. The lure of the ships was such, however, that he has again identified himself with a shipbuilding company.

* * *

V. B. BENDIX has established a ship brokerage business at 15 Whitehall street, New York. Associated with him is Frank C. Horvath. Until recently Mr. Bendix was manager of the New York office of the Gould Shipping & Trading Co., of 2 and 4 Stone street, a British concern. Formerly he had been connected with Callaghan, Atkinson & Co., ship brokers; Arthur H. Page & Co., Ltd., of New Orleans, and the S. J. Duhn Shipping Co., also of New Orleans. Mr. Horvath has been connected with the general shipping business at New York for some years.

* * *

MATHER M. RICHARDSON has become vice president and treasurer of Antony Gibbs & Co., Inc., 61 Broadway, New York. Mr. Richardson, an experienced shipping man, was attached to the staff of the British consul at 44 Whitehall street, during the war and is said to have received high commendation for the duties he performed in the trade division.

* * *

W. A. HARRIMAN, chairman of the United American lines, New York, recenty announced the personnel of the organization to be: HARRIS LIVERMORE, president; HENRY DEARBORN, vice president; VICTOR H. THUN, controller; F. W. ANDERSON, secretary; C. M. FEDDERMAN, treasurer; C. J. BECK, general freight traffic manager; F. W. RELYEA, J. E. WALDORF, and C. E. BARRY, freight traffic managers; E. LEDERER, director of passenger traffic; and J. D. TOMLINSON, operating manager.

* * *

L. E. FORCE, for years identified with the lumber export business of the Pacific coast, most of the time with Hind, Rolph & Co., has been appointed foreign exploitation agent for the Douglas Fir Exploitation & Export Co. Mr. Force leaves shortly for an extended tour of Great Britain and Europe to demonstrate the value to Pacific coast lumber. He is thoroughly familiar with Pacific timber and is expected to open up a large field for products from that coast.

* * *

PROF. JOHN ROSENGREN, instructor of naval architecture of the Chalmers Technical institute, Gotheborg, Sweden, is in this country studying the latest improvements in marine practices in various shipyards, industrial plants and colleges. His first visit to the South Philadelphia works of the Westinghouse Electric & Mfg. Co. He later visited the Hog Island shipyard, the New York Shipbuilding Corp. plant at Camden, N. J., and the Merchant Shipbuilding Corp. at Bristol, Pa.

* * *

COL. GUY D. GOFF, who has been acting as general counsel of the Emergency Fleet corporation, has been appointed general counsel of the shipping board. ERSKIN WOOD, has been named admiralty counsel of the board.

* * *

W. GEOPFERT, manager of the inward freight and claims departments of the Kerr Steamship Co., New York, has been made manager of the company's freight offices at 44 Beaver street. Before joining the Kerr organization, Mr. Geopfert was associated with Walter B. Pollack, director at New York of the United States railroad administration.

* * *

A. G. HOWARD has succeeded Robert Kjarsgaard as treasurer of the New York Overseas Co., Inc., 44 Beaver street, New York.

* * *

ALVISE BRAGADIN has resigned as a director of the Marine & Commerce Corp., New York. During the war, Mr. Bragadin was a member of the interallied shipping committee.

* * *

J. B. D. PENNINK has been appointed the American representative of the Rotterdam Lloyd, Rotterdam, and the Netherland Lloyd, Amsterdam. In his new office, he succeeds W. Ruys. His headquarters are in the Whitehall building, New York.

* * *

F. L. CHAMPAGNE has resigned as superintendent of hull construction at the Sparrows Point, Md., plant of the Bethlehem Shipbuilding Corp. He has been connected with the company since 1899.

* * *

LOUIS F. SWIFT, of Swift & Co., has resigned as director of the Green Star Steamship Co., New York.

* * *

M. M. MOORE, Mesta Machine Co., Pittsburgh, has been placed in charge of the foreign sales office of that company, recently opened in the Singer building, New York.

* * *

LESTER C. NEFF, district agent of the shipping board at Galveston, Tex., has resigned to become assistant general manager of the Export Steamship Co., Inc., New York. He is succeeded by C. H. MARSHALL, formerly manager of the operating department of the shipping board at New Orleans.

* * *

THOMAS J. KAIN was recently appointed assistant to the secretary-treasurer of the Society of Naval Architects and Marine Engineers, and is in charge of the executive office at 29 West 39th street, New York.

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Activities in the Marine Field

Latest News From Ships and Shipyards

Coal Movement Behind Schedule

BY H. C. MEADE

COAL receipts for September were far below 4000 cars a day, the number it was estimated would be necessary to take care of the requirements of the Northwest. Stocks on the lake front are low. The slump is said to be due to the shortage of cars and labor at the mines. Tonnage is coming out rather freely and cargoes are being dumped as fast as they are ready. The shortage has cut into the fuel supply and boats have had trouble getting bunker coal at Ohio ports. Receipts at the docks of Duluth and Superior for September were 991,770 tons of anthracite and 4,109,800 tons of bituminous. For the same period last year the docks handled 134,300 tons of anthracite and 1,058,900 tons of bituminous. The car supply in the ore trade held up until the last few days of the month when there was a letup, but dispatch is now better. Receipts of ore at some of the lake front furnaces are much smaller than they were early in the season, but ore for direct shipment is going forward much faster than at any time this year. Shipments of iron ore in September amounted to 8,923,482 tons, an increase of 744,999 tons over shipments in September, 1919. The total movement for the season up to Oct. 1 was 44,273,356 tons, a gain of 6,496,825 tons over the same period in 1919 and a loss of 3,956,153 tons from that period in 1918. Most of the ore carriers are busy on their contracts and not much wild tonnage is on the market. The grain movement was slow in getting started but has become fairly active. Tonnage for prompt and future loading is offered at 6 cents for grain from the head of Lake Superior to Buffalo. Small carriers and medium sized steamers are lined up to load grain and in all probability there will be a fair amount of tonnage from now on. Chartering for future loading has not been very active. A number of boats in the passenger trade have been laid up for the winter.

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The steamer MERTON E. FARR, the third of the four 600-foot steel bulk freighters built by the American Shipbuilding Co. on its own account, with the steamers L. M. BOWERS and JAMES E. DAVIDSON, will be operated by G. A. Tomlinson.

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The Great Lakes office of division of operations of the United States shipping board is to be closed within a few weeks. All the business of the ninth district of the shipping board, with the exception of two steamers building at Saginaw, will be completed by then. During the period of operation of the ninth district, which was in charge of W. M. Williams and Harry L. McDonald, 430 steamers and 47 tugs that were built at lake yards for the shipping board were sent to the coast.

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The steamer CANADIAN CARRIER, built at Port Arthur, Ont., for salt water service was placed in drydock at Ashtabula, O., recently to be cut in two. As the steamer is too long to pass through the Welland canal, she had to be taken to the coast in sections.

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The steamer HARRY COULBY on leaving the harbor at Duluth recently struck the abutment of the interstate bridge, doing about $3000 damage to the bridge.

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Three mine sweepers built at Lake Michigan ports for the government recently left for the coast.

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Some passenger boats on the lakes are being discontinued for the season. The steamer SEEANDBEE of the Cleveland & Buffalo Transit Co. has been laid up for the winter. A number of the other passenger boats have also been dropped.

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The steamers JOHN ERICSSON and HENRY STEINBRENNER recently collided in the fog in the St. Clair river, just below Port Huron. The ERICSSON was placed in drydock at Ashtabula, O., with 10 damaged plates.

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The channel of the Black river at Lorain, O., is to be lowered to a 22-foot depth.

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The CANADIAN PIONEER, one of a fleet of 40 ships now in the service of the Canadian government, recently left Montreal for India, inaugurating a trade route between Canada and the Orient.

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The dredging of the shoal off the lower end of the downbound channel of the St. Clair Flats canal has been completed.

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Permission has been given to the American Shipbuilding Co. by the shipping board for the sale of ships abroad. The company has negotiated a few foreign sales and has more in progress.

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The passenger steamer R. B. HAYES, one of the best known pleasure boats on Lake Erie, is to be dismantled. She was built in 1876 and was retired in the spring of 1918 because of the high cost of operation. The steamer is owned by the G. A. Boeckling Co., owner and operator of Cedar Point. She was on the Sandusky-Cedar Point run for more than 20 years.

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The E. & P. ore docks at the foot of Cascade street, Erie, Pa., which had been idle for several years, have been put in commission. They will be kept in operation day and night until the close of navigation.

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James E. Davidson, vice president of the American Shipbuilding Co., has been elected a member of the board of directors of the Great Lakes Transit Corp., Buffalo, to succeed Ward Ames Jr., Detroit, who recently resigned. Mr. Davidson is the son of Capt. James Davidson, Bay City vessel owner and shipbuilder.

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The employes of the Great Lakes Engineering Works, Detroit, have subscribed and paid for in cash over one-third the entire stock of the company, which has recently been reorganized.

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The steamer J. P. MORGAN loaded with ore was struck by lightning at the Whitefish point recently and her compasses were put out of commission.

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The steamers W. E. FITZGERALD and BALTIC collided recently in the Detroit river. The BALTIC which had a number of damaged plates and frames, went into drydock at Lorain, O., to make repairs.

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At a meeting of the stockholders of the Great Lakes Engineering Works, Detroit, it was decided to adopt the old corporate name. The following officers were elected: Antonio Pessano, chairman board of directors; John A. Ubsdell, president and general manager; George B. Turnbull, vice president and assistant general manager; John T. Webster, vice president; Frederick G. Morley, secretary and treasurer.

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The largest cargo of hard coal ever brought to Duluth was carried by the steamer H. G. DALTON on one of her recent trips. The cargo consisted of 14,613 net tons.

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A northwest gale on Lake Superior recently forced vessels to seek shelter. A number of boats were from 18 to 24 hours late.

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The recommended draft for Lake St. Clair and St. Mary's river is now 20 feet 3 inches, for Lake Michigan, 20

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feet 6 inches, and the maximum draft for Buffalo, Conneaut, Ashtabula and Fairport is 20 feet 3 inches.

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The steamer MALTON grounded in Lachine lake recently and sprung a leak. She was docked at Cornwall for repairs.

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The steamer PERCIVAL ROBERTS JR., grounded on Round island, Straits of Mackinac, recently. She was not damaged and was released without lightering.

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The steamer FRANCIS WIDLAR was placed in drydock at Ashtabula, O., recently for repairs to her crankshaft.

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The 600-foot steamer JAMES DAVIDSON, named for James Davidson, shipbuilder and owner, Bay City, was launched on Oct. 9 at the Wyandotte yard of the American Shipbuilding Co. She is the last of the four freighters built by the American Shipbuilding Co. on the company's account. The freighter, which will be operated by G. A. Tomlinson, will be ready for business in November.

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The steamer HEMLOCK parted steering gear recently and grounded in West Neebish channel, completely blocking the channel for a few hours.

Activities Along the Pacific Coast

PROBABLY the first shipment of ship steel ever carried from Puget sound recently was taken by the British steamer EURYDAMAS, bound for Liverpool and Glasgow. The boat loaded 2000 tons for use in British shipyards. This cargo was stock left over at the Skinner & Eddy yards and sold to foreign builders. Originally this steel was shipped from eastern centers by rail to Seattle and now it is on its long journey to Great Britain through the Panama canal.

* * *

So serious is the situation facing the Puget Sound Navigation and allied companies, which operate local steamship service to Puget sound ports, that unless greatly increased rates are allowed, some of the routes are likely to be abandoned. Competition of the auto, increased costs of operation and other factors have cut heavily into the income of these lines. The greatest problem is that of fuel oil. Upon the expiration of present contracts, under which oil is being furnished at $1.87 per barrel, operators state they may not be able to get supplies at even $3 per barrel. The cost of remodeling the vessels into coal burners is said to be almost prohibitive, totaling $40,000 each for some of the larger vessels.

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The Robert Dollar Co. is again owner of the steel steamer originally known as GRACE DOLLAR, built in 1913. In 1915 she was purchased by the Pacific Steamship Co. and renamed ADMIRAL WAINWRIGHT. Now she has been sold to her original owners, who have renamed her AGNES DOLLAR.

* * *

Several thousand tons of apples and other perishable fruits have been booked for shipment through Seattle on the steamers of the Holland-American line, which has just inaugurated service between Puget sound and north Europe. These vessels have refrigerator space, which is proving a boon to the growers of fruit in eastern Washington.

* * *

Under authority of the department of state, the shipping board steamer EASTERN VICTOR has sailed from Seattle for Sebastopol with a cargo of 8000 tons of railroad equipment. The ship loaded under assignment to the Thorndyke-Trenholme Co. This cargo was laid down at Seattle and Vancouver, B. C., three years ago and was intended for shipment to Vladivostok. Unsettled conditions in Russia caused a change in plans and the equipment has since been in storage. It is expected to be delivered to the anti-Bolshevik forces at the Black sea port. While the EASTERN VICTOR was at Seattle, extreme secrecy was observed owing to the uncertain attitude of local labor; but the cargo was stowed without any disturbance or delay.

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A ventilator cowl cap and protector has been invented and perfected by Howell Parker, first officer of the steamship ELDRIDGE, and associates. The cap is a close fitting device, which can be instantly clamped on the ventilator shaft, when the cowl is removed, eliminating the customary canvas covering, which requires time for lashing. The device has been successfully tried on the ELDRIDGE especially during the typhoon season in the Orient.

* * *

With a bumper crop in the Hawaiian islands, receipts of pineapples at Seattle are breaking all previous records. Recently a special train of pineapples, imported from Hawaii, was started from Seattle for Chicago. The train was composed of 26 cars, carrying 35,985 cases or 1,000,000 cans of pineapples valued at $500,000.

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The port of Portland has created a liability insurance fund of its own to meet all accident claims of employes. This plan has been adopted in preference to taking liability insurance with private companies or through the state industrial accident commission.

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The first passenger vessel to leave Portland, Oreg., for the Orient in years has departed from the Columbia river. This is the SEIYO MARU of the Toyo Kisen Kaisha, which recently inaugurated service to the Oregon port. Sixteen first class and 100 steerage passengers were booked from Portland, which hopes to now have a regular passenger service to China and Japan. For the first time in 16 years, the immigration officers at Portland were required to inspect a passenger vessel, when the SEIYO MARU arrived.

* * *

With the intention of carrying out the proposed plan of harbor development, including the completion of the new floating drydock and the erection of a third unit to the terminal system, the Portland dock commission has authorized the issuance and sale of an additional $2,000,000 of improvement bonds.

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Advices from Japan state a law shortly is to be passed providing a load line for all vessels. According to announcement, this regulation will apply to foreign vessels loading in Japanese waters as well as to carriers flying the Nipponese flag.

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The 11,000-ton ammunition ship PYRO, built at the Puget sound navy yard, has been completed and has put to sea bound for Hampton Roads. A sister ship is soon to go into commission from the same yard.

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Adopting American ideas, Japanese seamen are forming labor unions to combat the inroads of Chinese labor. Several Japanese lines have recently dismissed Japanese seamen and replaced them with Chinese. This has precipitated a somewhat serious situation and now the Japanese threaten to organize. Japanese operators on their part assert that Japanese seamen are inclined to make trouble. Chinese seamen, they say, are more docile and willing. Also, conditions in the shipping world justify employment of cheaper labor.

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Completing a noteworthy towing feat, the tugs STORM KING and HERCULES have delivered safely at San Francisco the nine sections of the two Seattle drydocks purchased by San Francisco interests. The docks were the wooden units sold by the Skinner & Eddy Corp. and the Ames Shipbuilding & Drydock Co. The nine sections each were towed 824 miles to San Francisco, much of the time in stormy weather. The average voyage from Seattle to San Francisco occupied about 12 days.

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JOHN WORTHINGTON, W. H. LIBBY and LIVINGSTON are the names selected for the three 12,000-ton tankers under construction at the G. M. Standifer plant, Vancouver, Wash., for the Standard Oil Co. The first will be launched about Nov. 15.

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Because they will not travel on Japanese liners, hundreds of Chinese coolies are filling the steerage quarters of British steamers arriving from the Orient. The boycott against the Japanese is still in effect. The Chinese laborers are enroute to Havana to work in the sugar fields.

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Important terminal improvements are being carried out at Vancouver, B. C., by the Dominion government. Already $5,000,000 has been appropriated and an immense pier now is under construction. It is announced the government is seeking in England suitable passenger liners for a new service to the Orient. All

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of the 18 freighters already launched and in service or under construction for the Canadian government's merchant marine on the west coast will be used to develop trade from British Columbia to Pacific ports.

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Under a revised agreement, the Puget Sound Navigation Co. has agreed to pay the city of Tacoma one cent per passenger for every traveler passing over the Tacoma municipal pier. Heretofore the company paid a flat annual rate of $4200.

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Richard Welsford, Liverpool, and John Barnsley have been named respectively managing director and manager of the Union Steamship Co., Vancouver, B. C., succeeding the late E. H. Beazley, who held both positions.

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In a race against time, the British steamer MINNIE DE LARRINAGA saved her wheat charter by one hour. Under the terms of the charter the freighter was due at Portland at noon on Sept. 15. She arrived at 11 a. m., having been delayed enroute by foul weather.

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Neal H. Begley, vice president of Frank Waterhouse & Co., Seattle, is making an extended tour of the Orient for the purpose of surveying the situation with reference to future business. Mr. Begley's itinerary will take him to Japan, China, the Philippines, Straits Settlements and Java, where for many years the Waterhouse firm has had business connections.

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Announcement is made that, beginning in October, north Pacific ports again will see vessels of the American-Hawaiian fleet, which played so important a part in the development of Pacific trade prior to the war. This service is being resumed by the American Ship & Commerce Corp. and the new line will be welcomed as business from coast to coast is increasing rapidly.

Along the Atlantic and Gulf Coasts

THE Mobile Shipbuilding Co., Mobile, Ala., announces that $2,000,000 has been raised to guarantee completion of four steamships, keels for which have been laid at the plant. This will keep this yard open all winter and will give employment to 1000 men.

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Plans have been drawn and construction will soon begin on the big new coffee and sisal warehouse authorized by the dock board at New Orleans. The building is to be erected on a 300-acre tract owned by the state of Louisiana, at Market street and the river, New Orleans. Cost estimates have not been announced.

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Mobile soon is to have coal terminals costing $400,000, General Connor, of the inland waterways division of the federal government having selected the site, Sept. 26. Money has been available for construction of this utility for more than a year, but no effort had been made to select the site.

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River steamboat M. E. NORMAN, owned and operated by the Alexandria Cooperage Co., Alexandria, La., was sunk by storm in the Mississippi river Sept. 22, near St. Rose, La., and is reported a total loss.

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The New Orleans dock board has advertised for bids for construction of half a mile of steel sheds to cover open docks, and offer better protection for cargoes.

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New Orleans broke all grain-loading records for the port on Sept. 23, when 943,186 bushels of wheat were put aboard nine ships at the Stuyvesant, Westwego and Municipal elevators.

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Necessity and high railroad rates seem to be forcing shippers to do what opportunity and government propaganda has been unable to induce them to do—make use of the Mississippi river barge lines. The amount of freight handled by these lines is growing steadily, and the average now is 40,000 tons a week. The lines are carrying full capacity, despite lack of proper terminals at any port in the valley, with the exception of St. Louis. At present, ten 2000-ton barges are in operation, with sixteen 600-ton barges as helpers. Six 500-horsepower towboats are hauling these barge strings.

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The 35,000-barrel oil barge PYRAMUS, built and equipped by the National Shipbuilding Co., Orange, Texas, made her first trip to Tampico, Mexico, Sept. 27. She was towed by the steamer HASTNAI, to Tampico and return.

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Shipping suffered almost no damage from the annual September storm, owing to the accurate forecasts of the direction and velocity of the hurricane made by the weather bureau branch at New Orleans. The power boat fleet of some 5000 work and fishing craft, which operates in Louisiana waters, also escaped with slight property damage and no loss of life. The power fleet of the Louisiana department of conservation made a complete survey of the fleet immediately following the storm, and found less than a dozen boats damaged, with none so far reported lost.

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The United States shipping board has announced the sale, at auction of the shipyard formerly operated by Fred T. Ley & Co., Mobile, Ala., on Oct. 8, 1920.

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The 4-mast schooner JAMES C. HAMLEN, built for the Rogers & Webb Co. for the transatlantic and South American trade, recently was launched at the yards of the Cumberland Shipbuilding Co., South Portland. Me. Mrs. James C. Hamlen Jr.. wife of the president of the company was sponsor.

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The LAKE ENNIS, owned by the shipping board and recently in the coal trade to Boston, has been purchased by the Baltimore Transportation Co.

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The new steamer NORWALK, built for the Boston-New York freight service of the Eastern Steamship Lines, Inc., will shortly take her place on the Boston route. The NORWALK has a 3000-ton capacity and is a single screw vessel equipped to burn fuel oil. Capt. H. H. Crowell, commodore of the Eastern fleet, will have command.

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A new trade route from Canadian ports to India will be inaugurated. operated jointly by the Canadian Government Merchant Marine, Ltd. and the British India Steam Navigation Co., England. The new service is similar to the arrangement whereby the government and the Canadian National railways are to operate a service out of Vancouver, B. C., to China and Japan in connection with the Blue Funnel line and Alfred Holt & Co.

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The steamer GOVERNOR COBB, recently purchased by the Peninsular & Occidental Steamship Co., has been placed in the trade between Key West, Fla., and Havana, Cuba.

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Built for the U. S. shipping board the steamer PACHET recently was launched from the yards of the Atlantic Corp., Portsmouth, N. H. The PACHET, which is the ninth steamer of her type to be built at these yards for the shipping board, is 8800 tons deadweight, 401 feet over all, 56 feet beam and 21 feet depth. She was 90 per cent complete when launched.

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The CHINA ARROW, an oil carrier of 12,600 tons, has been launched from the yards of the Bethlehem Shipbuilding Corp., Quincy, Mass. The new craft is 485 feet long, 62 feet 6 inches beam and 39 feet 6 inches deep. Miss Fredericka H. Fales, daughter of President F. S. Fales of the Standard Transportation Co., for whom the carrier was built acted as sponsor.

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Through the purchase recently of Livermore, Dearborn & Co. by the American Ship & Commerce Corp. and the American-Hawaiian Steamship Co., Livermore, Dearborn & Co. will hereafter be known as the United American Lines, Inc. Harris Livermore, president of the Shawmut Steamship Co., and senior operating officer of the Livermore concern, has been made president of the United American Lines Inc., and Henry Dearborn, vice president of the Livermore company has been made vice president of the new company.

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Bits From the Log of Progress

Events of Interest to Those Engaged in Operating, Constructing and Outfitting Yards and Ships

THE BUREAU of investigation of the United States shipping board, which has been in co-operation with the claims division for the last two years, has been abolished by Admiral W. S. Benson, chairman of the board. The work of the bureau was designed to aid in settling claims against the government and in preventing payment in cases of fraud. The files of the bureau have been turned over to the legal department of the shipping board and, in the future, it is planned to have the investigations conducted by the department of justice.

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THE EMERGENCY FLEET corporation is selling all the surplus stock of steel and iron it has on hand at various shipyards and depots. Some is being shipped to Scotland where there is a big demand for steel, most of it being initially purchased by a New York steel concern.

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PLANS FOR the organization of the Hudson River and Erie Waterway association are fast nearing completion. A group of prominent shipping and manufacturing interests, headed by P. H. W. Ross, president of the National Marine league, are its sponsors. The principal object of this organization will be to promote the use of the barge canal and to secure much needed improvements in the port of New York and the Hudson river. An extensive publicity campaign is to be launched throughout all sections affected by the canal. All barge lines operating on the new channel will be urged to join the association and the co-operation of all interests will be sought for spreading information relating to the canal. As the association grows it will extend its ship-by-canal campaign with the ultimate end in view of creating thorough co-operation between the Great Lakes carriers, barge canal lines, vessels of the United States merchant marine and all industrial organizations.

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THE GREATEST WATERFRONT improvement in 50 years of New York's maritime history is planned by the commissioner of docks and approved by the sinking fund commission. The improvement will require about 10 years for its completion. The proposal calls for construction of 18 new piers on North river, to be 950 to 1025 feet in length. Two of the piers are to be 100 feet wide and the remainder 125 feet. With the vehicular tunnel, these new docks are expected to solve the city's west side dock problem.

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THE NEW FOUNDRY at the Philadelphia navy yard has just poured the metal for a 50,000-pound casting. This is the largest machine casting ever made in this part of the country and was a complicated one. When finished the mammoth piece of steel will be used as a valve for the Hetchhetchee valley water project to supply the city of San Francisco. The navy yard recently placed this foundry in commission.

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THE DIVISION of construction and repairs will remain in Philadelphia at least until April, 1921, it has been announced definitely by the United States shipping board. Plans were made some time ago for consolidating the activities of the shipping board in Washington and it was expected the Philadelphia offices would be closed. The board has about 150 employes in the division of construction and repairs which was moved to Philadelphia in August, 1918. It was said a change of plans was necessitated by the mass of work in the Philadelphia office and it is estimated that this work will last until next April.

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THE ATLANTIC COAST Shipbuilders' association has received inquiries for two tankers for quick delivery.

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JAPANESE SHIPBUILDERS have been setting a number of records. For some time they have been launching one or more large cargo and passenger ships every week and the Kawasaki Dockyard Co., Kobe, claims to have established a world's record in shipbuilding by constructing a 5857-ton vessel in 23 days. Ten berths of the Kobusai Kisen Kabushiki Kaisha are filled for the year.

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KEELS WILL be laid soon at the Philadelphia navy yard for two huge battle cruisers, which are expected to be larger, faster, and capable of carryng more deadly armaments than any cruiser now afloat. They will be 874 feet long, 106 feet wide, 31 feet draft with a displacement of 45,500 tons and a speed of 33 knots an hour. Each vessel will have four armored turrets in whch eight 16-inch, 50-caliber guns will be mounted, secondary batteries of sixteen 6-inch, 53-caliber guns and four 3-inch, 50-caliber antiaircraft guns, and eight 21-inch torpedo tubes. Armor will be carried only on the turrets, as the cruisers will rely on their speed for protection from hostile guns. They will have 70 commissioned officers in the crew, 64 petty officers, 820 enlisted men, and 75 marines, makng a total of 1029. It is estimated that each cruiser will cost $24,000,000.

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THE APPRENTICE drafting school at the Fore River, Mass., plant of the Bethlehem Shipbuilding Corp. has 20 apprentices registered for a course in drafting. Thirteen of these apprentices are taking hull drafting and the remainder engine drafting. The courses include drafting, mathematics, mechanics, strength of materials, ship and engine construction, as well as work in the shops of the yard. The shop work is conducted on a part time basis and allows the students to spend a certain period on school work and on shop work.

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INQUIRIES INSTITUTED by the Norwegian Ship Owners association he elicited the fact that 115 contracts amounting to 663,000 tons are held by Norwegian firms with British shipyards. The total amounts to be covered by these contracts in three consecutive years is estimated at £15,200,000.

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RECORDS OF the New York office of the shipping board disclose that, while in 917 only 10 per cent of the men below the grade of officers placed on shipping board vessels were Americans, during the last six months the average has been 55.7 per cent.

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THE FIRST cargo of coal ever sent from the Pacific northwest to Norway recently was loaded aboard the Johnson line motorship PACIFIC, which sailed from Seattle for down-coast ports to complete her cargo.

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FIRST OF the Luckenbach Steamship Co.'s big intercoastal liners to go to Seattle, the 12,000-ton steamship ARCHER has taken on 3,000,000 feet of ties.

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Bits From the Log of Progress

Events of Interest to Those Engaged in Operating, Constructing and Outfitting Yards and Ships

AFTER ONE of the most adventurous trips in the history of west coast trading, according to estimates of seafaring men, the little auxiliary schooner ISKUM has reached Anadyr, Siberia. The boat was sent out from Seattle by the Siberian Commercial Co. as a trading ship under command of Capt. C. I. Olsen. A trading permit has been obtained from the Siberian government and the little vessel now is on her way for Kolyma bay, on the north coast of Siberia, where the bulk of her trading will be done. The present schedule calls for the ISKUM reaching Nome, Alaska, about Nov. 1 with a cargo of furs, obtained in barter with the Siberian natives, the value of which is estimated at about $250,000.

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A RUN of 125 days from Puget sound to Durban, South Africa, has been scored by the barkentine ALICIA HAVISIDE, a converted shipping board wooden boat of the so-called Ferris type. The success of this vessel is expected to lead to conversion of a number of the unfinished wood steamer hulls built on the Pacific coast into sailers.

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ADDITIONAL SHIP repair facilities were made available to shipping at Philadelphia recently when the Wilmington Steamboat Co., also known as the Wilson line, which operates a line of passenger steamers between Philadelphia and Wilmington, Del., offered to permit the use of its marine railway at the latter city for any vessels needing hauling out for repairs. The marine railway, will accommodate vessels of not more than 1000 tons or 200 feet long.

* * *

INAUGURATING THE MOVEMENT of much of Washington's apple crop for eastern markets by water from Seattle to the east coast, the Holland-American line loaded 59,000 boxes of Yakima apples on the steamer EEMDYK. This ship with the KINDERDYK have 2000 tons of cooled space for handling perishable cargo.

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THE ITALIA-AMERICA, through its American agents, McDonnell & Trunda, 5 State street, New York, announces that it has been appointed general agent for the United States and Canada of the TRANSOCEANA, owned by the Societa Italiana di Navigazione. The SAN GENNARO, SAN GIORGIO, and the SAN GIOVANNI, of this same company, which are now being refitted, will shortly reenter the passenger service between American and Italian ports.

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THE 3-MASTED sailing schooner NORTHERN CHIEF recently arrived at Seattle from Vavau, South Seas, making the voyage in 50 days. She is the smallest British overseas ship that ever arrived at that port, having a capacity of 363 net tons. The captain reported that the influenza epidemic had nearly wiped out the population of the South Sea islands.

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SEATTLE HAS made much progress in five months toward establishing an intercoastal trade service via the Panama canal. In that time it has increased the number of such steamship lines from none to three; has 14 steel carriers, aggregating 280,200 tons, in operation; and plans to add 16 more vessels in the near future. The Isthmian Steamship Co. intends to add 18 carriers to its present fleet of seven for this trade route and will use Seattle as the terminal.

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PLANS HAVE BEEN perfected by Supple & Martin, Portland, Oreg., for converting a half finished wooden hull, belonging to the shipping board, into a coal barge for use in the harbor.

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THE HARRIMAN OPERATING CORP. of the United American lines, is to place the American-Hawaiian fleet of 26 steel steamships in operation between New York and Seattle via ports on both coasts. The new steamship service will give Seattle a total of 58 steamships in the intercoastal service via the Panama canal, the other vessels being 25 of the Isthmian Steamship lines, New York, four of the North Atlantic & Western Steamship Co., Boston, and three of the Atlantic Gulf Pacific Co., Baltimore. None of these services existed six months ago.

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A REVERSAL of the old order of railroad predominance over ships is taking place through the medium of the Panama canal. Tonnage through the canal is increasing so rapidly that a recent official report to the interstate commerce commission predicts the railroads will face a serious loss of business unless the land carriers are given means of meeting the competition. General disapproval of combination rates based on distances east and west of the Mississippi and Missouri rivers was expressed in the report which favored joint through class and commodity rates.

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THE STEAMER CALEDONIER of the Royal Belge line recently anchored in New York harbor as her condenser tube suction line was plugged. The vessel was loaded for sea. A lighter of the Morse Dry Dock & Repair Co., Brooklyn, N. Y., was sent out with a diver and the line cleared, permitting the vessel to leave port promptly.

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INCREASED FREIGHT movement between Seattle and Australia and New Zealand has led to the assignment of a new steel steamship as an extra ship on this new run. The vessel is the WEST COMARGO and with the WEST MAHWAH, WEST HOLBROOKE, and LAS VEGAS, will be handled by the General Steamship Corp., San Francisco.

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DIRECT FREIGHT steamer service between Portland, Oreg., and Seward, Alaska, is being considered by the Pacific Mail Steamship Co. One plan is to inaugurate a circular route running from San Francisco to Portland, Seward and the Orient and returning to San Francisco. The proposal results partially from a recent petition for more direct mail service to Alaska.

* * *

WHEN THE Pacific Steamship Co.'s steamship ADMIRAL WATSON recently arrived in Seattle she brought two carloads of whale oil and half a carload of whale hide from Cook Inlet, Alaska, where "Beluga Joe" McGill, who startled the whaling world two years ago by beginning whaling operations on land, is having a good season. McGill traps the whales with a net which is pulled up when the tide goes out, leaving the whales stranded.

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THE PACIFIC Union is the name of a firm recently organized at Portland, Oreg., for conducting a general import and export business. E. V. Vanchon has been appointed general manager.

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Practical Ideas for the Engineer

Weak Points of Present Day Condensers Described by Naval Officer—Producer Gas as Marine Fuel

THE importance of the elimination of condenser defects has been recognized in the navy for many years, and as this question is assuming an increasing degree of prominence in the mercantile marine and land installations, it is hoped that some remarks on service experience may be of interest and value.

In the early days of low powers and comparatively high ratio of machinery weight in war vessels, a high standard of purity of feed water was not absolutely essential, and owing to its protective qualities a certain amount of boiler scale was not particularly objectionable. Under these circumstances the boilers were frequently worked with a slight density, and the admission of small amounts of salt water to the feed was a matter of no great moment, and indeed would not ordinarily be detected.

Further developments in the direction of greater horsepower per unit weight of machinery required the attainment of the maximum boiler efficiency compatible with the type of boiler then employed, and the presence of any nonconducting scale upon the heating surfaces could no longer be tolerated. A high standard of purity of feed, therefore, became essential, and condenser defects, hitherto unnoticed, became more and more apparent. Subsequently the demands for maximum power on a minimum weight necessitated the development of the water-tube boiler, which in its present form is peculiarly sensitive to the quality of feed supplied, and a condenser defect which formerly would have been regarded as of little importance is now attended by results which are out of all proportion to the magnitude of the defect itself.

Results of Defects

Among the immediate results following upon such a defect as a small perforation are:

(a) A rise in the density of the boiler water followed by priming (that is, the passage of water with the steam through the system), with consequent possible damage to fast-running reciprocating auxiliaries, and undue wear (erosion) of turbine nozzles in modern vessels; and unless the evaporation is considerably eased, and the engines either slowed down or stopped, the mechanical damage caused by the water passed over may be considerable.

(b) The deposition of scale upon the heating surfaces.

(c) The commencement of serious corrosive action in the system, including both boilers and turbines, the first named being particularly severe in the highly forced boilers of the present day.

It is on these grounds, both of reliability and durability, that the importance of maintaining a pure "feed" rests.

Fortunately, the proportion of defective tubes compared with the number of tubes on service is extremely low and is not greater than 50 in 1,000,000 per annum; but if it be realized that in a large vessel fitted with some 48,000 tubes of a total length approximating to 115 miles, such a small defect as a ⅛-inch diameter per hole or one cracked tube may render the vessel unmanageable in a moment of great stress, it will be evident that it is a matter of great importance to secure immunity from such defects and, moreover, one which requires considerable investigation and joint co-operation between the manufacturer, the metallurgist, and the user.

Care in Fitting

Many of the early difficulties experienced were found to be due to faulty design and manufacture, but these, which concerned accuracy of fitting rather than faults in the tubes themselves, have been gradually eliminated. Defects of this nature may be summarized as follows:

1. Insufficient support of tubes between the tube plates.
2. Holes in diaphragm plates too large.
3. Holes in tube plates too large or too small.
4. Unsuitable packing.
5. Slackness of ferrules in tube plates.
6. Steam or drain orifices unsuitably placed, allowing steam and hot water, sometimes contaminated with oils, to impinge on certain tubes.

Insufficient support leads to undue vibration of the tubes, and although this has been largely rectified by the provision of suitable and unequally spaced diaphragm plates, and by limiting the diameters of the tubes and the holes through which they pass, a certain clearance must of necessity be allowed. The effect of vibration, more especially in high-speed vessels, cannot be ignored.

Experience has shown the necessity of adhering to rigidly defined limits in regard to the tolerances of tubes and holes in tube plates, both on the score of guarding against the fit being too close, with consequent abnormal strain thrown on the tubes when screwing up the glands, and also of guarding against too loose a fit, resulting in the packing being forced between tube and tube plate and probable leakage. Similarly, the exact concentricity of ferrules and tubes within narrow limits is of importance. Since the adoption of limiting clearances, defects of this character have to all intents and purposes been eliminated.

Causes of Corrosion

Investigations into the general problem of the nature of the underlying causes of corrosion within the alloy itself have resulted in various theories, none of which has as yet met with general acceptance, and in the present stage the most we are able to do is to endeavor to trace each defect to its immediate observable source. In many cases this is possible and a fairly simple matter; but in others, such as may be covered by the description "general corrosion," considerable difficulty may be experienced. Fortunately such cases are comparatively few, and though it may be argued that this comparative freedom hardly justifies the necessary expense and trouble of further investigation, yet from naval considerations it is just these few cases for which remedy must be found.

The information available at the admiralty is derived from reports forwarded by ships as failures occur. Owing to the conditions of service during hostilities it has been impossible to obtain complete records of all failures during that period, but from examination of reports received since the cessation of hostilities, the following statement has been deduced to show the present causes of failure in the proportion in which they have occurred:

	Per Cent of total failures
(*a*) Deterioration at inlet ends	18.0
(*b*) Perforation due to local pitting	14.8
(*c*) Perforation due to obstruction	14.8
(*d*) Perforation due to steam impingement	5.4
(*e*) Crushed ends	5.4
(*f*) Splitting	10.8
(*g*) Perforation due to contaminated circulating water	1.0
(*h*) General corrosion	29.8

The large proportion of failures due to deterioration at the inlet ends of the tubes is noteworthy. Generally speaking, there is a marked thinning

From a paper read at a meeting of the Institute of Metals, at Barrow-in-Furness, England, Sept. 16, 1920. The author, G. B. Allen, is an engineer lieutenant-commander, royal navy.

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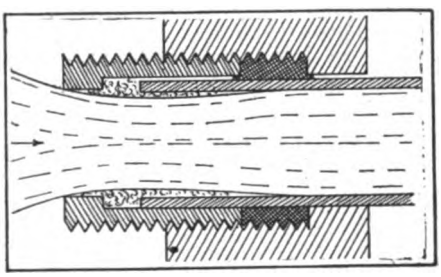
away at the ends of the tubes (not infrequently accompanied by wear of ferrules) culminating in perforation at from 1 to 3 inches from the end.

In many cases where the greatest intensity of the deterioration occurs at the upper inside surface of the tube, the presence of air has been held to be the chief contributory factor, and under such circumstances the provision of air-releasing devices at the highest point of the circulating water system has proved of marked benefit. However, with all such mechanical precautions, the evacuation (before entry to the tubes) of air which is necessarily in suspension in the circulating water is at the best only partial. This is more especially the case in high-speed shallow draft vessels, and as will be evident from an examination of the accompanying illustration, the sharp edges both of ferrule and tube, assisted to some extent by the possibility that the tube and ferrule may not always lie perfectly concentrically, tend to break the flow of water and to form pockets of an unstable nature where air may be reasonably expected to accumulate.

Dangers from Abrasion

This type of defect has been particularly noticeable in vessels serving in shallow waters containing a considerable proportion of solid matter, such as sand, chalk, etc., and this, together with the comparatively high-water velocity through the tubes, points to the influence of erosion, or the abrasive action of gritty particles, as being of considerable importance. The presence of such gritty matter cannot of course be avoided on service, and it appears that investigations with regard to the elimination of this type of defect must take the lines of endeavoring to obtain a metal whose surface is better able to withstand this abrasive action.

Whereas in the cases of tube-end deterioration the number of tubes affected in any condenser (apart from those which actually fail) may be considerable, cases of local pitting are rarely evident in more than one or two tubes in the condenser concerned, and when once a failure has occurred and the tube plugged or replaced, little further trouble is experienced. In these cases perforation occurs at isolated spots, and the failure has been generally considered to be due to some local defect, such as a spill or lamination. Elimination of defects of this character is entirely a question of the manufacture of the mechanically perfect tube, which desirable result can only be attained by the drawing down of a mechanically perfect cast shell. The practice of turning and boring each shell, even if regarded as merely for purposes of exploration of the metal immediately beneath the surface skins, has a considerable safeguarding effect toward the reduction in the number of such surface irregularities, as may be discovered on sighting. Perforations, the cause of which has been directly traced to obstructions, were particularly prevalent in coal-burning ships where the ashes were discharged beneath the waterline, and though it is possible to nullify the effect of a vessel's own refuse by suitably placing the ash chutes and by the adoption of oil-



FLOW OF CIRCULATING WATER THROUGH INLET END OF TUBE

fuel firing, yet such obstruction of tubes by cinders, etc., may still be caused by refuse from other vessels.

The recorded cases where failure has occurred through the impingement of steam and water directly on a limited area of the outer surface of certain tubes are few, and in general have been confined to condensers other than those of admiralty design. Such failures should not occur, provided that orifices are suitably placed and baffled.

Why Ends Are Crushed

The proportionate number of failures due to crushing is small, and these may be regarded as isolated cases. In no case has it been established that over-tightening of screwed glands has been resorted to, and the fact that crushing sometimes does occur, serves to emphasize the importance of the tubes being sufficiently hard to stand a reasonable margin of pressure due to tightening up above that absolutely necessary to secure watertightness, though it may be remarked that crushing is sometimes observed as a natural result of the weakening of tubes which have been attacked internally by corrosion of a general nature.

There is some divergence of opinion as concerning the most desirable degree of purity of the 70:29:1 alloy, but investigation has shown that a large proportion of the tubes, which have failed from splitting, have been manufactured from materials of a lower standard of purity than that required by the admiralty specification.

Apart from the question of purity of constituents, the internal condition of stress in the finished tube must have considerable bearing on the liability to season cracking and splitting. The work done during the final draw (which must be such as to leave the tubes sufficiently hard to stand the test of grometing) of necessity leaves the material of the tube in an indeterminate condition of internal stress, and anything that can be done which will eliminate this internal stress, while at the same time allowing the tube to retain the requisite hardness, will be of great benefit in minimizing defects from this source.

The case in which failure has been directly ascribed to the use of unsatisfactory circulating water is exceptional, but it certainly gives weight to a widely held opinion that the conditions under which many condensers are worked in the early stages of their life, that is in comparatively stagnant fitting-out basins contaminated by various kinds of refuse, are conceivably of importance as a primary cause of tube decay. On the occasion referred to, the vessel had been anchored in waters contaminated by sewage, and the case is quoted as emphasizing that materials for marine usage should be able to resist corrosion under varying conditions which do not allow of the selection of particular materials to suit particular waters. The deleterious effect of vegetable oils has already been described before this institute, but the writer is not aware of any experiments having been carried out to determine the effect of oil fuel in regard to the acceleration of corrosion; though it may be remarked that in one of His Majesty's vessels which reported a considerable number of defective tubes within two months of entering into service, no definite cause could be traced beyond that extended basin trials had been carried out in comparatively stagnant water contaminated by a considerable leak from one of the ship's tanks.

Study of General Corrosion

The proportionate number of reported failures due to general corrosion does not adequately express the importance of this class, these being cases of actual failure only, that is general corrosion culminating in perforation; whereas the great majority of cases in which general corrosion is present are not recorded, and it is the possibility of failure at an un-

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known moment which gives this matter so serious an aspect.

Leakage from electric circuits has been put forward as being a contributory cause of corrosion; but though no evidence of a positive character has been obtained in support of this contention, it has been observed that failures have occurred shortly after the discovery of "grounds," and it is probable that the effect, if any, is one of acceleration rather than a primary cause.

The general problem of corrosion of condenser tubes may be conveniently regarded from four different standpoints:

1. The arrest or prevention of corrosion in condensers as at present constructed.
2. The treatment of tubes of accepted composition.
3. The general design of condensers.
4. The utilization of more suitable alloys than those at present in use.

The provision of steel protector plates and cast iron water-ends has proved satisfactory in checking the rate of deterioration provided good connections are secured, but at the same time considerable wear of the cast iron ends takes place, and this wear if excessive is a very undesirable feature. The present admiralty practice is to make the tubes and tube plates of as nearly the same composition as is practicable and to secure steel slabs direct to the tube plates, but from the foregoing remarks it cannot be said that this practice is entirely effective.

The Cumberland process has been fitted in certain vessels, but beyond the fact that it has been found that this process has not arrested decay where such decay has been in evidence before the process has been installed, the experience gained has not been sufficient to allow of any reliable conclusions being drawn.

Effects of Coatings

With regard to the treatment of working tubes, the admiralty (acting on a well known and successful practice of coating corroded copper pipes with a film of pitch and marine glue) have experimented with resistant varnishes. In the first vessel treated, although a certain degree of protection was obtained, it was found that, probably as a result of the erosive action of the water (but possibly on account of the difficulty of forming a film of even thickness and of satisfactory drying), the varnish became washed away in places, thus exposing portions of the bare metallic surface to the action of the water. Experience with a second vessel has not been extensive, but it is understood that general corrosion which formerly resulted in comparatively frequent failures has been entirely arrested. In these cases the varnish has been applied to the tubes "in place" and dried by the admission of steam to the condenser, and it is probable that such a process carried out on tubes before being fitted would be of considerable value, provided that the surfaces formed withstand the work of fitting in place and prove sufficiently resistant to abrasive influences.

The protective value of an oxide film has been suggested by a former report of the corrosion committee, and the admiralty has under observation a vessel fitted with tubes on which such a film has been formed. Unfortunately this vessel has done very little steaming and no useful data have as yet been obtained.

In regard to the elimination of failures caused by surface defects, a vessel has been fitted with compound tubes made on the lines suggested by Sir Charles Parsons, but here again owing to postwar conditions it has not been possible to obtain any conclusive results.

Need of Correct Design

The general design of condensers has been found to be closely connected with tube defects, or rather with the acceleration of deterioration, and in particular in regard to certain designs where the whole of the tubes are not drowned. In these designs a few of the upper rows of tubes which are situated above the waterline have been observed to be particularly prone to corrosive action, and consequent upon the general thinning this action is not infrequently accompanied by "end crushing." Generally speaking, the design must of necessity be prepared with regard to the space and position available in the ship, and under the present conditions the approximately horizontal position must be accepted as inevitable. In very early designs, vertical tubes have been employed, but in such cases where it has been necessary to arrange for outside circulation the lower surfaces of the tubes have been found liable to deterioration. The present practice is to allow the circulating water to pass through the tubes, and it may be noted that the alternative method of outside circulation not only does not lend itself to a suitable engine-room arrangement, but is undesirable on account of the difficulty of providing access for cleaning.

The admiralty has from time to time experimented with tubes of various compositions, but experience to date has shown that the tubes made to admiralty specifications have proved the most satisfactory under the varying conditions imposed by naval service. With every precaution taken during manufacture, and with the adoption of any known preventive or protective process, it must be admitted that freedom from deterioration cannot be guaranteed, and it appears that complete immunity, or at least a guaranteed life, can only be obtained by the employment of an alloy other than a simple brass.

Revise Steel Weights

To correct a situation arising from inconsistencies in the thicknesses and areas of structural sections, the Association of American Steel Manufacturers has issued a revised table giving these data accurately.

In 1896, the association adopted a list of standard profiles of structural steel sections which are known as American standard structural sections. In 1911, the association adopted standard methods of computation for published weights and areas. The weights that were published for the minimum thicknesses of beams and channels did not correspond exactly to the published areas and it has long been known that it is impracticable to furnish these sections true to both the published weights and dimensions.

The approved weights per foot are shown in the third column of the table below for the sections of *minimum* web thicknesses, which correspond to the published dimensions.

Section	Depth, Inches	Weight, Pounds per Foot: Present Weight	New Weight
Beams	3	5.5	5.7
	4	7.5	7.7
	5	9.75	10.0
	6	12.25	12.5
	7	15.0	15.3
	8	18.0	18.4
	9	21.0	21.8
	10	25.0	25.4
	12	31.5	31.8
	12	40.0	40.8
	15	42.0	42.9
	15	60.0	60.8
	15	80.0	81.3
	18	55.0	54.7
	20	65.0	65.4
	20	80.0	81.4
	24	80.0	79.9
	24	105.0	105.9
Channels	3	4.0	4.1
	4	5.25	5.4
	5	6.5	6.7
	6	8.0	8.2
	7	9.75	9.8
	8	11.25	11.5
	9	13.25	13.4
	10	15.0	15.3
	12	20.5	20.7
	15	33.0	33.9

There is to be no change in the profiles and properties of sections of minimum web thickness nor in the weights and properties of the intermediate and maximum sections of American standard beams and channels.

The new weights were put into effect Sept. 1 by all of the companies rolling these sections.

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Producer Gas as a Fuel

In these days of high fuel costs, the question of bunker economy grows more and more important in maritime operations. Under such conditions, the performance of the 4-mast, auxiliary engined schooner BESSIE A. WHITE, affords a record of importance. This vessel arrived in New York following a remarkable voyage, upon which her 200 horsepower engine consumed producer gas. This ship is 186 feet long, 37 feet beam, and 13 feet molded depth and registers 600 net tons.

She began her trip from New Brunswick carrying a cargo of lumber to Preston, England. On her return she brought a cargo consisting of 1073 gross tons of wood pulp into New York, coming back against a head wind. The ship was 28 days on this return voyage, during which time her engines were kept constantly running. Her producer plant consumed in this time but 48 tons of Welsh coal. Her sister ship, without auxiliary, required 48 days to make the same trip. The auxiliary power, therefore, saved the vessel owner 20 days. Estimating this saving at the rate of $300 a day, the total saving on the trip was $6000.

Crew of Three Required

The power plant on the BESSIE A. WHITE requires a crew of three men, whose wages and keep represented a cost of $600 for the 28 days. The fuel burned cost $12 a ton, adding $576, or a total cost for the operation of the power plant of $1176 against an estimated saving of $6000 in possible earnings of the boat for 20 days. According to the engineers who equipped this boat, the engine cost $12,000, the gas producer plant cost $3500 and the installation $5000, making a total capital outlay for the complete power plant $20,500.

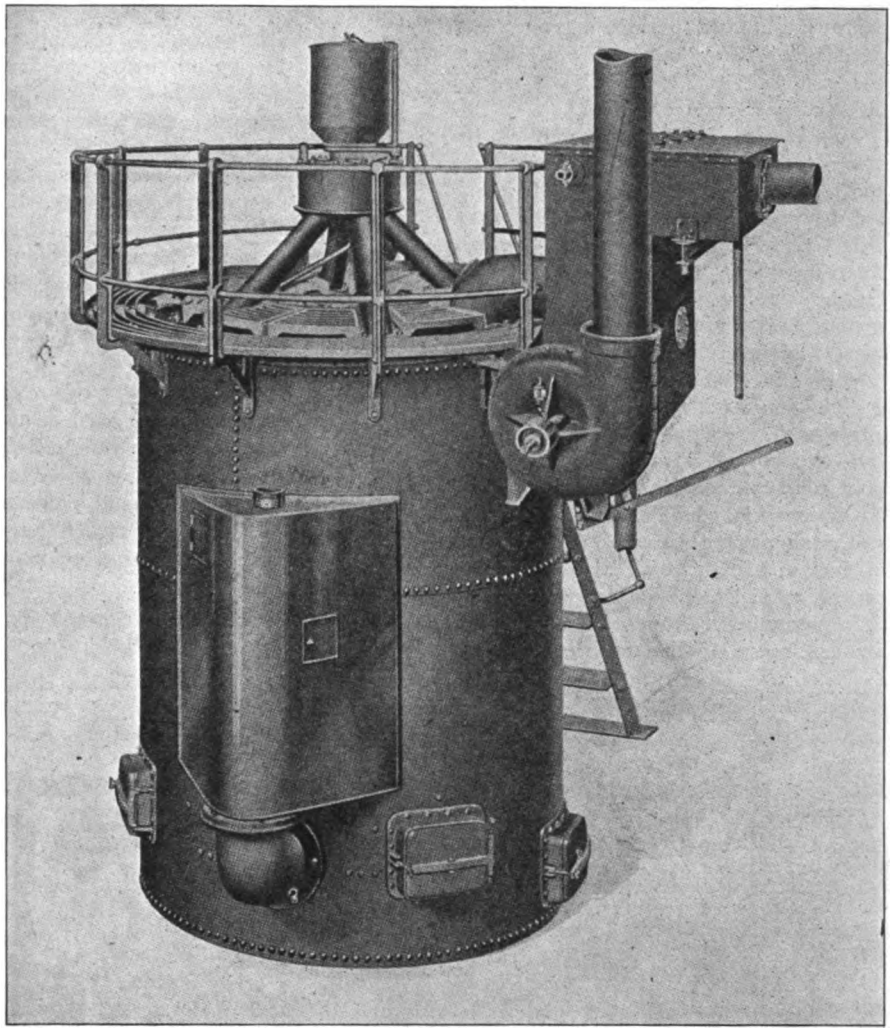
The engine used on this boat was manufactured by the Wolverine Motor Works, Bridgeport, Conn. It is a 6-cylinder type with a 11-inch bore, 15-inch stroke and rotates at 300 revolutions per minute. It is a 200 horsepower engine and in calm weather and without sails, can drive the BESSIE A. WHITE at 6 knots. It was said by the engineer on the boat she had made 4000 miles in 21 days, using her engines only when outside the trade winds.

A gas producer was used to make fuel for the engine, the whole power plant being placed far aft and taking up little space from the cargo capacity of the boat. The engine is aft of the gas producer plant itself. The producer on this vessel is 6 feet 6 inches in diameter and 8 feet high, and requires only 8 feet of space fore and aft in the boat. It is said that tests have shown the plant burns in 24 hours but from 165 to 195 pounds of coal per hour.

Operation Is Simple

This particular producer is manufactured by the Gas Producer & Engineering Corp., New York. It consists of a steel shell with special fire brick lining. A gas elbow connects the producer with the gas scrubber and drier combined. At the base of the producer is a cleaning door through which the ashes are removed. At the top is the hopper through which coal or fuel is fed with the help of an air seal to the producer. Near the base of the producer is an air inlet for the steam and air entering the fire box. From the gas scrubber and drier a pipe leads the cleaned gas to the engine. The gas is relayed on its way to the engine in a tank, which method of feed gives an even pressure. This plant was designed to secure the compactness and simplicity essential for marine work.

The company began making plants of this nature in 1907, and its production for the current year will pass the 100 mark. At least 100 similar gas producer plants have been installed on shipboard in conjunction with the same type of engines. The same plant, however, is being used in connection with 20 different makes of engines, and has been sold to boat owners in 20 different countries. The greatest economy from this type of auxiliary power has been found when the boats are in a service which requires long and continuous runs, such as coastwise towing, etc. It is used on tow boats, freight boats, passenger boats and lighters as well as auxiliary power schooners. The greater economy is said to be found in conjunction with plants of 50 to 1000 horsepower.



THE GAS PRODUCER, WHICH REQUIRES SPACE ONLY 8 FEET SQUARE

Built for the Boston Towboat Co., the new harbor tug MARS, slid down the ways recently at East Boston, Mass. Miss Sadie Nickerson, daughter of Capt. Mortimer Nickerson, manager of the company acted as sponsor. The new tug is 72 feet overall, 18 feet 2 inches beam, and 8 feet depth of hold.

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Equipment Used Afloat, Ashore

Governor for Preventing Racing of Engine

AN INVENTION designed to prevent the racing of marine engines is now being manufactured by Chas. Cory & Son, Inc., New York. This apparatus, known as the Ramsay anticipating marine governor, was originally introduced a few years ago by the British Marine Engineering Co., Ltd., London, England. Shortly afterward the war broke out and it became impossible to manufacture the governor. Improvements in design were worked out, however, and manufacture was recently begun.

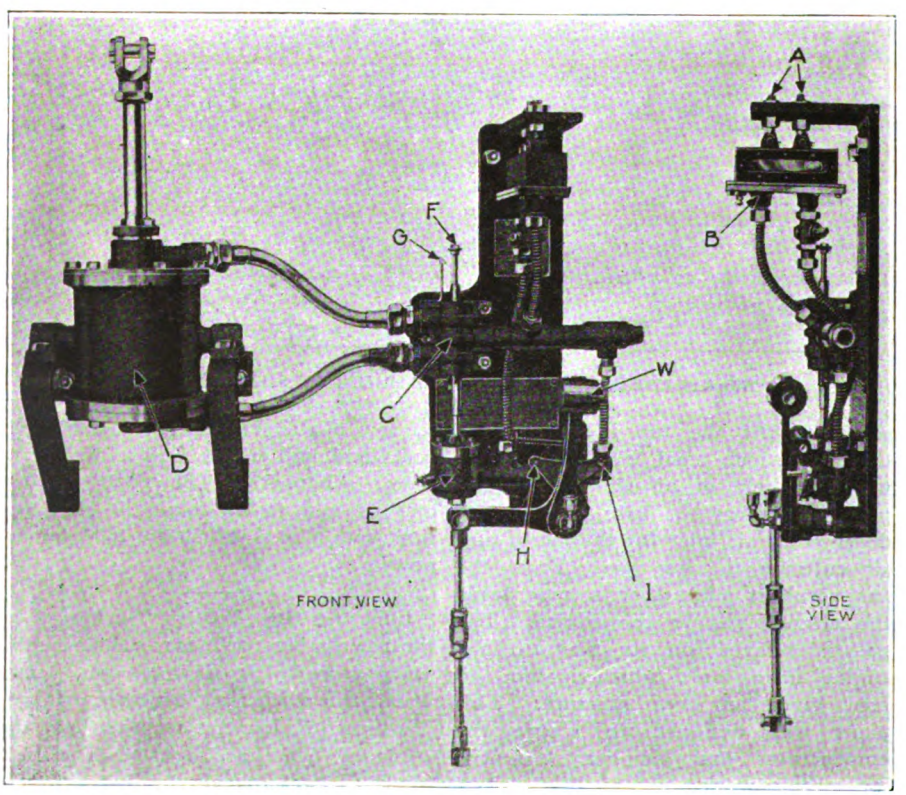
The governor has been adopted by many prominent steamship lines in all parts of the world. Among them are the Munson Steamship line, Standard Oil Co. of New Jersey, Norwegian Amerika line, Cunard line, United States shipping board and Royal Mail Steam Packet Co. Among the advantages claimed for the governor are that on passenger steamers and yachts it eliminates racing with its consequent unpleasant vibration, enabling the vessels to proceed at full speed in any kind of weather without danger, while on commercial vessels, it is said to result in improved running time, saving in fuel and eliminating the danger of racing with its inevitable repair bills.

In action, the governor is declared by engineers to be anticipatory and not merely a means of correction after racing has started. It is designed to check the engine the minute a propeller is lifted out of the water by the pitch of the ship and, secondly, to check racing in case of any possible accident, such as the throwing of a propeller blade, etc.

A piston working in a cylinder is fitted to the throttle valve of the engine and the movement of this piston is obtained by permitting a vacuum to communicate with one side and atmospheric pressure with the other side through a pilot control. The anticipating valve comes automatically into action when the lift of the ship's stern brings the propeller dangerously near the surface, causing the throttle valve to close at the moment before the propeller comes out of water and racing ordinarily would commence, and to reopen when the period of danger is over. It consists of a closed box suspended in the direction of the keel, in which is a rocking valve controlled by a rolling ball. This ball is plated and polished and runs in a V-shaped, nickel-plated groove providing the utmost sensitivity in action.

The valve operated between the condenser and the relay cylinder, opens and closes as the motion of the vessel causes the ball to roll forward and aft. When open, the influence of the vacuum passes through the valve *B* to the under side of the piston in the relay cylinder, thereby causing the operating cylinder to be put into action. By means of the adjusting bolts *A*, the anticipating valve is set at the required angle to suit the particular trim and draft of the ship, the forward end being inclined upward more or less according to the trim. In the case of a ship traveling in ballast with the propeller near the surface, the box requires to be practically level, with just sufficient lift to keep the ball at the after end when the ship is steady, so that a lift of a foot or two at the stern would cause the ball to roll. In a loaded ship the inclination of the box should be greater, proportionate with the draft.

The 3-way valve *C* controls the action of the operating cylinder *D* and is itself controlled by the small relay cylinder *E* below it. While the governor is "at rest" the influence of the vacuum passes through the upper arm of the 3-way valve to the upper side of the piston of the operating cylinder *D*. The lower arm of the 3-way valve is closed to vacuum and admits atmospheric pressure to the opposite side of the piston in the operating cylinder. When either the anticipating or emergency valves opens and the governor comes into action a vacuum is produced below the relay cylinder piston. Atmospheric pressure admitted above it compresses the spring, and the 3-way valve spindle is drawn downward, thus reversing the action of the 3-way valve, admitting to the operating cylinder atmospheric pressure above the piston and creating a vacuum below the piston, causing the piston of the operating cylinder to reverse, and in so doing close the throttle valve. When the anticipating or the emergency valve which had caused the vacuum in the relay cylinder closes, sufficient atmospheric pressure is admitted through the small adjustable air valve at the bottom of cylinder *E* to cause the two pistons to return to the "at rest" position, and the throttle immediately reopens. Speed regulation in reopening of the throttle is obtained by adjustment of the small air valve, which equalizes the pressure on each side of the relay cylinder piston, permitting the spring under this piston to force it up to its normal position. If an engineer on watch single-handed should be obliged to leave his post while the engine is running, he should screw down the



GOVERNOR DESIGNED TO PREVENT ENGINE RACING

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washer *F* close to *G* so that if in his absence any accident should happen to the propeller or shaft, *G* will engage *F* and cause the throttle to remain closed until *F* is released by the engineer.

In addition to the anticipating valve, the main governor is fitted with an emergency governor, which is designed to provide against racing due to certain short following seas as well as accidents, such as broken shafts and lost propellers. It will cause the throttle to close immediately on the slightest acceleration of speed from any cause. It consists of a weight-lever *W* bound by an adjusting spring to another lever moving to and fro at the same speed as the engine is revolving, in front of a cock between the condenser and relay cylinder.

The second lever is connected to the main engine suitably to give it a reciprocating stroke of 4 inches. This connection is most frequently made with the indicator gear or in some instances with the air pump beam. When the engine is running at its predetermined speed, the weight-lever oscillates between the two projections, *H* and *I*, with the minimum of clearance without touching them. In that action the valve, of which these two projections are on the arms, is just closed. Immediately the speed should be increased by 1 per cent or more. The increased momentum thus given to the weight-lever causes it to strike one of the projections *H* and *I*, thereby opening the valve and creating a vacuum below the relay piston and causing the same action as in the case of the anticipating valve.

The governor is supplied in two parts, the control panel to be bolted to an engine column and the throttle operating cylinder fixed in proximity to the throttle valve. The two are joined together by two pipes and the control panel is connected by a pipe with the condenser.

Late Marine Patents

Copies of any one of these patents can be obtained by forwarding 25 cents in stamps to Siggers and Siggers, National Union Insurance building, Washington, and mentioning THE MARINE REVIEW.

1348855—Method and apparatus for locating submarines, Reginald A. Fessenden, Brookline, Mass., assignor to Submarine Signal Co., Portland, Me.

1348856—Apparatus for directive signaling, Reginald A. Fessenden, Brookline, Mass., assignor to Submarine Signal Co., Portland, Me.

1348912—Boat sail, Willis C. Ward, Orchard Lake, Mich.

1349014—Submarine destroying bomb, Joseph A. Steinmetz, Philadelphia.

1349075—Construction of vessels of reinforced concrete, Pierre Marie Lorton, Paris, France.

1349125—Ship's ladder, Peter Full, Vermillion, O.

1349317—Fastening device for lifeboats, Carl Voigt Bodom, Tampico, Mex.

1349414—Submarine gun, Kennedy Dougan, Minneapolis.

1349578—Wreck-salvaging apparatus, William M. Neeper, Capac, Mich.

1349800—Construction of ships, William Alderson, Kimberley, South Africa.

1349826—Method of molding concrete ships, Eugene Freyssinet, Paris, France, assignor to Societe des Navires en Ciment Arme, Paris.

1349897—Life-float, John H. McDonah, Boston.

1349981—Marine propeller, Edward Stevart, Manitowoc, Wis.

1350211—Sea dirigible, David Corson Jr., Mount Union, Pa.

1350224—Sunken-boat detector, Earl G. Haun, Marion, Ind.

1350259—Marine vessel, William P. Lay, Gadsden, Ala.

1349869—Marine boiler, John E. Bell, Brooklyn, N. Y., assignor to Foster Marine Boiler Corp., New York.

1351571—Ship davit, Harry B. Hills, Tompkinsville, N. Y., assignor to Steward Davit & Equipment Corp., New York.

Data on Patents

The annual report of the commissioner of patents for 1919 contains some interesting figures. In that year, 80,400 applications were received, 34,631 patents granted, 203 patents reissued and 77 patent applications withdrawn. The total number of patents handled was 38,598. Compared with 1916 when 71,003 applications were handled, and 45,927 patents issued, the figures for 1919 show a decrease of 7329.

The year 1916 showed the greatest volume of business for any year since the patent office began to function in 1837. During 1916, the patent office received $2,345,540.94, while its expenditures were $2,115,367.91 yielding a gain of $228,173.03. The figures for 1919 are $2,417,071.77 received, $2,310,420.02 expended, leaving a gain of $106,651.75.

Among the various states, New York leads the list for 1919 with 5980 patents granted while Illinois and Connecticut are tied with 3899. Among other states where a substantial number of patents were granted are: Pennsylvania, 3111; Ohio, 2505; Massachusetts, 1991; California, 1932 and New Jersey, 1898.

Patents issued to citizens of foreign countries in 1919 totaled 3687. England heads the list with 1245. Among other countries are: Canada, 819; Sweden, 155; Switzerland, 139 and Germany, 131; Norway, 83; Scotland, 85; Italy, 72; New South Wales, 69; Netherlands, 61 and Denmark, 54.

Business News for the Marine Trade

Capitalized at $50,000, the National Ship Supply & Machinery Co. recently was incorporated in Delaware by Charles Sheer, E. A. Ikam and I. Algase, New York.

The capital stock of the American & Cuban Steamship line, New York, recently was increased from $25,000 to $1,500,000.

The Baltimore-New York Ship Service Corp., 77 River street, Hoboken, N. J., recently was incorporated with a capital stock of $500,000, to build ships, vessels, engines, etc.

The Emerald Motor Ship Co., Wilmington, Del., has been incorporated in Delaware with a capital stock of $3,000,000 to own and operate boats, etc.

Capitalized at $98,000, the Jamaica Bay Dock Corp. recently was incorporated with headquarters at New York, by R. L. and R. H. Baldwin and J. H. Ward, Ridgewood, N. Y.

The Aetna Steamship Corp., New York, recently was incorporated with a capital stock of $100,000, by F. E. Rowland, C. Muller and E. J. Atkinson, 1242 Herkimer street, Brooklyn, N. Y.

With an active capital stock of $50,000, the Keystone Barge & Derrick Co., New York, recently was incorporated to operate scows, etc., by V. D. Withstandley, M. Wolinsky and J. E. Murphy, 115 Broadway, New York.

The Black Star Steamship Co., Jersey City, N. J., recently was incorporated with a capital stock of $500,000, by Samuel B. Howard, Robert K. Thistle and A. Roy Meyers.

The Adam Steamship & Commerce Corp., Jersey City, N. J., recently was incorporated with a capital stock of $50,000, by H. J. Skinner, Alfred F. McCabe and others.

Capitalized at $20,000,000, the American Transportation & Trading Corp. recently was incorporated in Delaware, by T. L. Croteau, M. L. Bruce and S. E. Dill, Wilmington, Del.

The Abragadine Co. recently was incorporated in Delaware to build ships, etc., with a capital stock of $1,000,000, by Samuel B. Howard, Robert K. Thistle and A. Roy Myers, New York.

Capitalized at $300,000, the Dominican Steamship Co. recently was incorporated in Delaware by E. M. Thierry, Raymond E. Cook and John F. Wharton, New York.

The Saliger Ship Salvaging Corp., 542 West Twenty-third street, New York, has obtained a 300-foot waterfront site at Jacksonville, Fla., where it plans to establish a drydock, ship repair and salvaging plant.

The Murnan Shipbuilding Co., Mobile, Ala., will have a large amount of dredging done at its plant.

The California Marine Oil & Refining Co., San Francisco, recently was incorporated with a capital stock of $3,000,000.

The Savannah Coal Dock Co., Savannah, Ga., recently was incorporated with a capital stock of $600,000.

The Bulk Freight Steamship Co. recently was incorporated in Delaware with a capital stock of $100,000, by Samuel B. Howard, Raymond J. Gorman and Harry G. Hand, New York.

The Newark Welding Co., 10 Lillie street, Newark, N. J., recently was organized by Peter Barneo and others.

The Dyer Co., Cambridge, Mass., recently was incorporated to do welding, etc., with a capital stock of $250,000, by P. W. Blake, Newton, Mass., Joseph J. Hasserr, Quincy, Mass., and Walter H. Foster, Belmont, Mass.

The Sound Welding Co., New York, recently was incorporated with a capital stock of $5000, by

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Business Changes

The New York marine office of the Diamond Power Specialty Co., Detroit, has been moved from 32 Broadway to 126 Liberty street.

The Ward Tool & Forging Co., Latrobe, Pa., has completed arrangements with John D. Scott, Inc., with whom is affiliated John E. Love, for representation in Michigan and the northwestern part of Ohio, with offices at 1156 Penobscot building, Detroit.

Joseph E. Benson has organized the firm to be known as the North Atlantic Shipping & Agency Corp., with offices at 512 Insurance Exchange building, Philadelphia. The new firm will do a general agency and chartering business. Mr. Benson was associated with Furness, Withy & Co. for the past 10 years coming to that company when it absorbed the Philadelphia house known as Charles M. Taylor's Sons.

On Oct. 1, Raymond Lovekin, advertising engineer, occupied his new location at 10 South Eighteenth street, Philadelphia. These new quarters in the Fuller building give the required additional floor space for his advertising and sales promotion forces.

The Azores Commercial Co., successor to A. S. Gouvea & Co., is now established at 253 Broadway, New York.

Rice, Unruh & Co., with offices at 403 The Bourse, Philadelphia, have been organized to conduct a business of steamship agents and brokers. The new firm will take over the agency business previously conducted by Gailey, Davis & Co., Philadelphia, and begins with a large number of ships on its lists. Mr. Rice of the new firm was formerly with the Cunard line, and Mr. Unruh has been associated with Gailey, Davis & Co.

W. T. Kyle, F. W. Oberkirch and H. G. Thompson, 200 Fifth avenue.

Capitalized at $25,000, the Bayside Shipyard, New York, recently was incorporated by T. Rummey, W. A. Lippincott and J. W. Ripley, Flushing, L. I., N. Y.

The Keans Transportation Co., Boston, has been incorporated with a capital stock of $150,000, to build vessels, shipyards, etc., by M. M. Dillaway, and George L. Dillaway, Wakefield, Mass., and Doris Kinney, Hudson, Mass.

The Dauntless Shipyard Inc., Essex, Conn., recently let a contract for the erection of a marine railway, storage sheds and yacht basin.

The Disappearing Propeller Boat Corp., Buffalo, recently was incorporated with a capital stock of $600,000, by W. L. Marcy, L. B. Gulick and W. V. Moot.

The Walker Navigational Instruments Corp., New York, recently was incorporated with a capital stock of $10,000, by C. S. Bryan, L. J. Hunt and H. V. Crawford, 120 Broadway, New York.

A small power house addition will be erected at the plant of William Cramp & Sons Ship & Engine Building Co., Philadelphia. The Fred A. Havens Co. has been awarded the general contract.

The Kelly Dry Dock & Shipbuilding Co., Mobile, Ala., contemplates the erection of a power house, machine shop, etc., at an estimated cost of $150,000.

Eli Ness, Savannah, Ga., has purchased a plant from the shipping board at Jacksonville, Fla., and will continue to operate it after improvements, etc., have been made.

The Standard Transportation Co., North Eleventh street, Greenpoint, Brooklyn, N. Y., has had plans approved by the United States shipping board for the construction of 10 oil steamers. Four of the vessels will be built by the Bethlehem Shipbuilding Corp. at its Fore river plant, Quincy, Mass., and two others at Sparrows Point, Md., and the San Francisco plants respectively of the same company. The other two will be built by the New York Shipbuilding Corp., Camden, N. J.

The Wheeler Condenser & Engineering Co., Carteret, N. J., manufacturer of steam condensers, pumps, engines, etc., has increased its capital stock to $1,500,000 preferred stock and 10,000 shares of common stock, no par value.

The Simpson's Patent Dry Dock Co., East Boston, Mass., contemplates the erection of an addition to the machine shop at its plant, to be 24 x 66 feet.

The Philadelphia Ship Repair Co., Mifflin street, Philadelphia, recently increased its capital stock from $200,000 to $600,000.

The Marine Transport Corp., 908-10 South Broadway, Baltimore, recently was incorporated with a capital stock of $450,000, by Clarence B. Gore, Arthur E. Gore and George H. Kastendike, and plans to construct and repair steamers, cargo vessels, etc. It is proposed to erect a shipyard at Baltimore.

The Columbus-McKinnon Chain Co., Fremont street, Tonawanda, N. Y., manufacturer of chain for industrial purposes, is reported planning the erection of an addition to its plant.

Hoisting machinery, conveying and other equipment will be installed at the proposed new ocean and rail terminal to be erected at San Francisco, by the city, at an estimated cost of $2,300,000. The state board of commissioners has approved the plans.

The bureau of yards and docks, Washington, has completed plans for the erection of a new mechanical shop at the Mare Island navy yard, near San Francisco.

The Mercantile Corp., Ltd., Montreal, Que., has been incorporated with a capital stock of $200,000, by Aubrey H. Elder, John deG. Audette, Felix W. Hacket and others, to engage in the manufacture of railroad, marine, foundry, and mining equipment, machinery, etc.

The Glassmann-Bartha Welding Corp., 132 Tenth avenue, New York, manufacturer of welding equipment, recently increased its capital stock to $100,000.

The John Eichleay Jr. Co., South Twentieth and Wharton streets, Pittsburgh, has been granted permission to build a new ship works on the left bank of the Monongahela river, which will include launching ways, shops, etc.

Cranes, hoisting, conveying and other machinery will be installed at the new piers and warehouses to be constructed by the American Chain of Warehouses, Cleveland, A. H. Greeley, president, Mill Basin, Jamaica Bay, Brooklyn, N. Y. A proposition has been tendered by the company to the New York dock department covering a leasehold of the site for 50 years. It is proposed to build six piers and four supporting warehouses, with total cost estimated in excess of $25,000,000. The company is now operating warehouse terminals in more than 100 cities of the country.

The Radio Corp. of America, Woolworth building, New York, has acquired the wireless station at Tuckerton, N. J., formerly operated by the Marconi Co., and has plans under way for extensions to cost about $200,000, including equipment. The J. G. White Engineering Corp., 43 Exchange place, New York, will be in charge.

Plans have been filed by the Bethlehem Shipbuilding Corp., Front street, Elizabeth, N. J., for the construction of a 1-story machine shop to cost about $25,000. The company has also awarded a contract for the erection of a control house for the new dry dock at its Fore river works, Quincy, Mass.

George F. Sproule, director, the department of wharves, docks and ferries, Philadelphia, has sent a communication to Mayor Moore of Philadelphia, covering the proposed program for pier and dock construction, estimated to cost $20,000,000, including cranes, hoisting, conveying and other machinery. Immediate construction is to include new piers, each 800 feet wide and 1200 feet long.

The Globe Shipbuilding & Dry Dock Corp., Fairfield, Baltimore, is rushing work on shops and other buildings, and in the near future will employ about 1200 men. Work has already been taken up at the yard, including repair of a number of vessels. B. C. Cooke is president.

The Marine Iron Works, Norfolk, Va., contemplates the erection of a 2-story machine shop, 60 x 175 feet. R. O. Coleman is president of the company.

The Union Shipbuilding Co., Fairfield, Md., will defer the erection of its 2-story plant addition, 70 x 200 feet, until early next year, and bids will be asked for at that time.

New Trade Publications

TELEMOTORS—Hydraulic telemotors manufactured by the Bethlehem Shipbuilding Corp. Ltd. Bethlehem, Pa., are described in a bulletin just put out by that company. These telemotors, which are of the duplex ram type, are designed so as to overcome many weak points which telemotors have developed in service. The bulletin emphasizes the elimination of leather packing in the construction of the working parts. By this means, it is claimed, leakage through the by-pass valves is eliminated. Absence of internal leakage enables a weather helm to be carried indefinitely, a decided steering advantage in heavy weather.

ELECTRIC DRILLS.—An illustrated circular is being distributed by the Independent Pneumatic Tool Co., Chicago, describing its electric drills which can be operated on either alternating or direct current, or motor wound for direct current only.

ELECTRIC HOISTS—A booklet descriptive of the standardized monorail electric hoists manufactured by the Link-Belt Co., Chicago, is just off the press. It describes these machines minutely, giving descriptions, weights, clearances and speeds with assistance of photographs. The illustrations show many actual installations in factories, machine shops and foundries of the surface as well as the overhead types.

RUDDERS—Design and operation of its maneuvering and reversing rudder are described in a treatise put out by the McNab Co., Bridgeport, Conn., American representatives of the manufacturers, Kitchen's Reversing Rudder Co. Ltd., Liverpool. By the use of these rudders, which are a radical departure in design, the functions of steering and maneuvering are combined. By their use, it is claimed, the propelling machinery may be run at constant speed and the boat handled in any manner, both as to speed and direction with the rudders alone.

WELDING.—The Metal & Thermit Corp., New York, has just issued a pamphlet outlining five laboratory experiments with the thermit process of welding. These experiments have been prepared to acquaint the student with the substance, characteristics and results of thermit reaction and are intended to show the speed of reaction, the heat produced, and the effects obtained by the superheated liquid slag and the superheated liquid steel.

FUEL REGULATOR—The Uehling Instrument Co., New York, has issued a special bulletin on its carbon dioxide equipment for both marine and stationary use. This equipment is designed to effect a saving of fuel through proper air supply to the combustion chamber. A feature of the appliance is the auxiliary indicator for the boiler front for guidance of firemen with a recorder for the engineer's office.

SHIPBUILDING—"Progress" is the title of an illustrated book just issued by the Moore Shipbuilding Co., Oakland, Cal. which shows graphically the complete facilities of this yard which enabled it to accomplish, among other records, the feat of launching six steel steamers on one tide. The booklet shows in detail the various units in the equipment of the yard which, since 1917, have replaced the original buildings and equipment. Many of the boats built by this yard, also, are illustrated in this book, among them the famous FREDERIC R. KELLOGG, which was torpedoed by a German U-boat off Sandy Hook.

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